Analytical and Quality Control Report

William Little WTS P.O. Box 363 Building 126 3RD Floor WSMR, NM, 88002

Report Date: January 5, 2007

Work Order: 6120823

Project Name:

HELSTF Groundwater Samples

Project Number: 7

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
111158	HLSF-0085-HMW-017-1206	water	2006-12-06	15:40	2006-12-07
111159	HLSF-0085-TB-763-1206	water	2006-12-06	15:40	2006-12-07

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 50 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

> Michael april Dr. Blair Leftwich, Director

Standard Flags

 $\, B \,$ - The sample contains less than ten times the concentration found in the method blank.

Work Order: 6120823 HELSTF Groundwater Samples

Analytical Report

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: Ag, Dissolved QC Batch: 32720 Prep Batch: 28394 Analytical Method: S 6010B
Date Analyzed: 2006-12-12
Sample Preparation: 2006-12-08

Prep Method: S 3005A Analyzed By: RR Prepared By: TS

Page Number: 2 of 50

RL

ParameterFlagResultUnitsDilutionRLDissolved Silver<0.00200</td>mg/L10.00200

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: Ag, Total QC Batch: 32745 Prep Batch: 28447 Analytical Method: \$ 6010B Date Analyzed: 2006-12-12 Sample Preparation: 2006-12-11

Prep Method: S 3010A Analyzed By: RR Prepared By: TS

RL

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: Alkalinity QC Batch: 33042 Prep Batch: 28719 Analytical Method: SM 2320B
Date Analyzed: 2006-12-12
Sample Preparation: 2006-12-12

Prep Method: N/A Analyzed By: JG Prepared By: JR

RL

Dilution RL Parameter Result Units Flag Hydroxide Alkalinity < 1.00 mg/L as CaCo3 1.00 Carbonate Alkalinity 4.00 mg/L as CaCo3 l 1.00 1 4.00 Bicarbonate Alkalinity 102 mg/L as CaCo3 4.00 106 mg/L as CaCo3 1 Total Alkalinity

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: Ammonia QC Batch: 32702 Prep Batch: 28456 Analytical Method: SM 4500-NH3 B,C Date Analyzed: 2006-12-11 Sample Preparation: 2006-12-11

Prep Method: N/A
Analyzed By: SM
Prepared By: SM

RL

ParameterFlagResultUnitsDilutionRLAmmonia-N<1.00</td>mg/L11.00

Work Order: 6120823 **HELSTF** Groundwater Samples Page Number: 3 of 50

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: QC Batch: Bromide (IC)

32998 Prep Batch: 28687

Analytical Method: Date Analyzed:

Sample Preparation:

E 300.0 2006-12-07 2006-12-07 Prep Method: Analyzed By: Prepared By:

JR JR

N/A

Flag

Flag

RL

Parameter Bromide

Result <1.00

Units mg/L Dilution 5

RL0.200

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis:

Cd, Dissolved 32720

Analytical Method:

S 6010B 2006-12-12 Prep Method:

S 3005A RR

QC Batch: Prep Batch: 28394 Date Analyzed: Sample Preparation:

2006-12-08

Analyzed By: Prepared By: TS

RL

Parameter Dissolved Cadmium

Result 0.00200 Units mg/L

RL

0.00100

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: QC Batch: Cd, Total 32745

Analytical Method:

S 6010B 2006-12-12 Prep Method: S 3010A Analyzed By: RR

Prep Batch:

Total Cadmium

28447

Date Analyzed: Sample Preparation:

2006-12-11

Prepared By:

TS

Parameter Flag

RL Result 0.00200

Units mg/L Dilution

Dilution

RL0.00100

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: QC Batch:

Prep Batch:

Conductivity

32699

Analytical Method:

SM 2510B 2006-12-08 Prep Method: N/A Analyzed By:

28448

Date Analyzed: Sample Preparation:

2006-12-08

DR JR

Prepared By:

Parameter Flag RL

Result 4550 Units

Dilution

Specific Conductance

μMHOS/cm

RL0.00

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: OC Batch:

Prep Batch:

Cr, Dissolved 32720

28394

Analytical Method: Date Analyzed:

S 6010B 2006-12-12 Prep Method: S 3005A Analyzed By: RR

Sample Preparation: 2006-12-08 Prepared By:

TS

RL

Dilution RL Result Units Parameter Flag Dissolved Chromium 0.0150 mg/L 0.00500

Work Order: 6120823 **HELSTF** Groundwater Samples Page Number: 4 of 50

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: Cr. Total QC Batch: 32745 Prep Batch: 28447

7

Analytical Method: S 6010B 2006-12-12 Date Analyzed: Sample Preparation: 2006-12-11 Prep Method: S 3010A Analyzed By: RR Prepared By: TS

RL

Parameter Result Units Dilution RL Flag 0.00500 Total Chromium 0.0150 mg/L ١

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: Cu, Dissolved QC Batch: 32720 Prep Batch: 28394

Analytical Method: S 6010B Date Analyzed: 2006-12-12 Sample Preparation: 2006-12-08

Prep Method: S 3005A Analyzed By: RR Prepared By: TS

Dilution RLParameter Result Units Flag < 0.0125 mg/L 0.0125 Dissolved Copper

RL

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: Cu, Total OC Batch: 32745 Prep Batch: 28447

Analytical Method: S 6010B Date Analyzed: 2006-12-12 Sample Preparation: 2006-12-11

S 3010A Prep Method: Analyzed By: RR Prepared By: TS

Parameter Flag

RL Result Units Dilution RL < 0.00500 mg/L 0.00500

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: OC Batch:

Total Copper

Ion Chromatography 32998

Analytical Method: Date Analyzed:

E 300.0 2006-12-07

Prep Method: N/A Analyzed By: JR

JR

Prepared By:

Prep Batch: 28687 Sample Preparation:

2006-12-07

RL Result Units Dilution RLParameter Flag 2.00 Chloride 88.2 mg/L 10 5 0.200 Fluoride 5.34 mg/L Sulfate 2950 mg/L 500 1.00

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: Na, Dissolved QC Batch: 32769 Prep Batch: 28394

Analytical Method: S 6010B Date Analyzed: 2006-12-13 Sample Preparation: 2006-12-08

S 3005A Prep Method: Analyzed By: RRPrepared By: TS

Sample: 111158 - HLSF-0085-HMW-017-1206

Sample: 111158 - HLSF-0085-HMW-017-1206

Sample: 111158 - HLSF-0085-HMW-017-1206

Work Order: 6120823 HELSTF Groundwater Samples Page Number: 5 of 50

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Sodium		1650	mg/L	10	1.00

Analysis: QC Batch: Prep Batch:	Na, Total 32825 28447		Date Analyzed:	Analytical Method: S 6010B Date Analyzed: 2006-12-14 Sample Preparation: 2006-12-11		S 3010A RR TS
			RL			
Parameter		Flag	Result	Units	Dilution	RL
Total Sodiun	n		1110	mg/L	10	0.500

Analysis: QC Batch:	NO2 (IC) 32998	Analytical Method: Date Analyzed:	E 300.0 2006-12-07		Prep Method: Analyzed By:	
Prep Batch:	28687	Sample Preparation:	2006-12-07		Prepared By:	JR
		RL				
Parameter	Flag	Result	Units	Dilution		RL
Nitrite-N		< 0.500	mg/L	5		0.100

Sample: 113	1158 - HLSF-0085-I	HMW-017-1206				
Analysis: QC Batch:	NO3 (IC) 32998	Analytical Method: Date Analyzed:	E 300.0 2006-12-07		Prep Method: Analyzed By:	JR
Prep Batch:	28687	Sample Preparation:	2006-12-07		Prepared By:	JR
		RL				
Parameter	Flag	Result	Units	Dilution		RL
Nitrate-N		8.13	mg/L	5		0.100

•						
Analysis:	P, Total		Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	32745		Date Analyzed:	2006-12-12	Analyzed By:	RR
Prep Batch:	28447		Sample Preparation:	2006-12-11	Prepared By:	TS
			RL			
Parameter		Flag	Result	Units	Dilution	RL
Total Phosph	orous		< 0.0500	mg/L		0.0500

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: OC Batch: Pb, Dissolved

32720 Prep Batch: 28394 Analytical Method: Date Analyzed:

S 6010B 2006-12-12 Sample Preparation: 2006-12-08 Prep Method: Analyzed By:

S 3005A RR Prepared By: TS

Parameter Dissolved Lead

Flag

RL Result < 0.00500

Units mg/L Dilution ì

RL0.00500

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: QC Batch: Pb, Total 32745 28447

Analytical Method: Date Analyzed:

S 6010B 2006-12-12 2006-12-11

S 3010A Prep Method: Analyzed By: RR

Prepared By:

TS

RL

Sample Preparation:

Parameter Total Lead

Prep Batch:

Flag

Result < 0.00500 Units mg/L Dilution

RL

0.00500

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: QC Batch: pН 32901 Analytical Method: Date Analyzed:

SM 4500-H+ 2006-12-07

Prep Method: N/A Analyzed By: JG

Prep Batch:

28609

Sample Preparation:

2006-12-07

Prepared By:

JR

RL

Parameter рН

Flag Result 8.53 Units s.u.

Dilution

RL 0.00

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis:

Semivolatiles WTS 32955

Analytical Method:

S 8270C

Prep Method:

S 3510C

QC Batch: Prep Batch:

28649

Date Analyzed: Sample Preparation: 2006-12-14 2006-12-12 Analyzed By: Prepared By:

DS DS

RLDilution RL Result Units Flag Parameter 0.00500 < 0.00500 mg/L Pyridine 1 0.00500 n-Nitrosodimethylamine < 0.00500 mg/L < 0.00500 mg/L 0.00500 2-Picoline 0.00500 mg/L Methyl methanesulfonate < 0.00500 mg/L 0.00500 < 0.00500 Ethyl methanesulfonate 0.00500 mg/L Phenol < 0.005000.00500 Aniline < 0.00500 mg/L < 0.00500 mg/L 0.00500 bis(2-chloroethyl)ether mg/L 0.00500 < 0.00500 2-Chlorophenol 0.00500 < 0.00500 mg/L 1,3-Dichlorobenzene (meta) 0.00500 mg/L 1,4-Dichlorobenzene (para) < 0.00500 0.00500 Benzyl alcohol < 0.00500 mg/L

continued ...

sample 111158 continued...

		RL			
Parameter	Flag	Result	Units	Dilution	RL
1,2-Dichlorobenzene (ortho)		< 0.00500	mg/L	1	0.00500
2-Methylphenol		< 0.00500	mg/L	1	0.00500
bis(2-chloroisopropyl)ether		< 0.00500	mg/L	l	0.00500
4-Methylphenol / 3-Methylphenol		< 0.00500	mg/L	1	0.00500
Acetophenone		< 0.00500	mg/L	1	0.00500
n-Nitrosodi-n-propylamine		< 0.00500	mg/L	1	0.00500
Hexachloroethane		< 0.00500	mg/L	1	0.00500
Nitrobenzene		< 0.00500	mg/L	1	0.00500
n-Nitrosopiperidine		< 0.00500	mg/L	1	0.00500
Isophorone		< 0.00500	mg/L	1	0.00500
2-Nitrophenol		< 0.00500	mg/L	1	0.00500
2,4-Dimethylphenol		< 0.00500	mg/L	1	0.00500
bis(2-chloroethoxy)methane		< 0.00500	mg/L	1	0.00500
Benzoic acid		< 0.00500	mg/L	1	0.00500
2,4-Dichlorophenol		< 0.00500	mg/L	1	0.00500
1,2,4-Trichlorobenzene		< 0.00500	mg/L	1	0.00500
a,a-Dimethylphenethylamine		< 0.00500	mg/L	1	0.00500
Naphthalene		< 0.00500	mg/L	1	0.00500
4-Ĉhloroaniline		< 0.00500	mg/L	1	0.00500
2,6-Dichlorophenol		< 0.0100	mg/L	1	0.0100
Hexachlorobutadiene		< 0.00500	mg/L	1	0.00500
n-Nitroso-di-n-butylamine		< 0.00500	mg/L	1	0.00500
4-Chloro-3-methylphenol		< 0.00500	mg/L	1	0.00500
l-Methylnaphthalene		< 0.00500	mg/L	1	0.00500
2-Methylnaphthalene		< 0.00500	mg/L	1	0.00500
1,2,4,5-Tetrachlorobenzene		< 0.00500	mg/L	1	0.00500
Hexachlorocyclopentadiene		< 0.00500	mg/L	1	0.00500
2,4,6-Trichlorophenol		< 0.0100	mg/L	1	0.0100
2,4,5-Trichlorophenol		< 0.00500	mg/L	1	0.00500
2-Chloronaphthalene		< 0.00500	mg/L	1	0.00500
1-Chloronaphthalene		< 0.00500	mg/L	1	0.00500
2-Nitroaniline		< 0.00500	mg/L	1	0.00500
Dimethylphthalate		< 0.00500	mg/L	1	0.00500
Acenaphthylene		< 0.00500	mg/L	1	0.00500
2,6-Dinitrotoluene		< 0.00500	mg/L	1	0.00500
3-Nitroaniline		< 0.00500	mg/L	1	0.00500
Acenaphthene		< 0.00500	mg/L	1	0.00500
2,4-Dinitrophenol		< 0.00500	mg/L	1	0.00500
Dibenzofuran		< 0.00500	mg/L	-	0.00500
Pentachlorobenzene		< 0.00500	mg/L	1	0.00500
4-Nitrophenol		< 0.0250	mg/L	1	0.0250
1-Naphthylamine		< 0.00500	mg/L	1	0.00500
2,4-Dinitrotoluene		< 0.00500	mg/L	1	0.00500
2-Naphthylamine		< 0.00500	mg/L	1	0.00500
2,3,4,6-Tetrachlorophenol		< 0.0100	mg/L	Î	0.0100
Fluorene		< 0.00500	mg/L	1	0.00500
Diethylphthalate		< 0.00500	mg/L	1	0.00500
4-Chlorophenyl-phenylether		< 0.00500	mg/L	1	0.00500
4-Nitroaniline		< 0.00500	mg/L	1	0.00500
		(0.00000		continued	0.00.00

continued...

sample 111158 continued . . .

		RL			
Parameter	Flag	Result	Units	Dilution	RL
4,6-Dinitro-2-methylphenol		< 0.00500	mg/L	1	0.00500
Diphenylamine		< 0.00500	mg/L	1	0.00500
Diphenylhydrazine		< 0.00500	mg/L	1	0.00500
4-Bromophenyl-phenylether		< 0.00500	mg/L	1	0.00500
Phenacetin		< 0.00500	mg/L	1	0.00500
Hexachlorobenzene		< 0.00500	mg/L	1	0.00500
4-Aminobiphenyl		< 0.00500	mg/L	1	0.00500
Pentachlorophenol		< 0.0100	mg/L	1	0.0100
Pentachloronitrobenzene		< 0.00500	mg/L	1	0.00500
Pronamide		< 0.00500	mg/L	1	0.00500
Phenanthrene		< 0.00500	mg/L	1	0.00500
Anthracene		< 0.00500	mg/L	1	0.00500
Di-n-butylphthalate		< 0.00500	mg/L	1	0.00500
Fluoranthene		< 0.00500	mg/L	1	0.00500
Benzidine		< 0.0250	mg/L	1	0.0250
Pyrene		< 0.00500	mg/L		0.00500
p-Dimethylaminoazobenzene		< 0.00500	mg/L	1	0.00500
Butylbenzylphthalate		< 0.00500	mg/L	1	0.00500
Benzo(a)anthracene		< 0.00500	mg/L	1	0.00500
3,3-Dichlorobenzidine		< 0.00500	mg/L	1	0.00500
Chrysene		< 0.00500	mg/L	1	0.00500
bis(2-ethylhexyl)phthalate		< 0.00500	mg/L	1	0.00500
Di-n-octylphthalate		< 0.00500	mg/L	1	0.00500
Benzo(b)fluoranthene		< 0.00500	mg/L	1	0.00500
7,12-Dimethylbenz(a)anthracene		< 0.00500	mg/L	1	0.00500
Benzo(k)fluoranthene		< 0.00500	mg/L	1	0.00500
Benzo(a)pyrene		< 0.00500	mg/L	1	0.00500
3-Methylcholanthrene		< 0.00500	mg/L	1	0.00500
Dibenzo(a,j)acridine		< 0.00500	mg/L	1	0.00500
Indeno(1,2,3-cd)pyrene		< 0.00500	mg/L	1	0.00500
Dibenzo(a,h)anthracene		< 0.00500	mg/L	1	0.00500
Benzo(g,h,i)perylene		< 0.00500	mg/L	1	0.00500
2-Butoxy Ethanol		< 0.00500	mg/L	1	0.00500

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
2-Fluorophenol		0.00700	mg/L	1	0.0800	9	10 - 75.1
Phenol-d5		0.00810	mg/L	1	0.0800	10	10 - 56.2
Nitrobenzene-d5		0.0478	mg/L	1	0.0800	60	18.1 - 108
2-Fluorobiphenyl		0.0524	mg/L	1	0.0800	66	20 - 112
2,4,6-Tribromophenol		0.00930	mg/L	1	0.0800	12	10 - 135
Terphenyl-d14		0.0719	mg/L	1	0.0800	90	28.2 - 134

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: TDS Analytical Method: SM 2540C Prep Method: N/A QC Batch: 32715 Date Analyzed: 2006-12-07 Analyzed By: JG Prep Batch: 28464 Sample Preparation: 2006-12-07 Prepared By: JR

¹8270 Only - One acidic surrogate is out of control limits. The other two acidic surrogates show extraction was performed properly.

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,								
				RL				
Parameter		Flag	R	esult	Un	its	Dilution	R
Total Dissolve	ed Solids			4580	mg	/L	1	5.0
Sample: 111	158 - HLSF-0085-H	MW-017-12	06					
Analysis:	TPH DRO		Analytical	Method:	Mod. 8015I	3	Prep Me	thod: N/
QC Batch:	32665		Date Anal	yzed:	2006-12-09		Analyze	d By: SP
Prep Batch:	28422		Sample Pr	eparation:	2006-12-09		Prepareo	l By: SP
			RL					
Parameter	Flag		Result		Units		Dilution	R
DRO			<5.00		mg/L		<u>I</u>	5.0
						Spike	Percent	Recover
Surrogate	Flag	Result	Units	Di	lution	Amount	Recovery	Limits
n-Triacontano	2	12.8	mg/L		1	15.0	85	57 - 132
Sample: 111 Analysis: QC Batch:	158 - HLSF-0085-H TPH GRO 32657	IMW-017-12	Analytical l Date Analy		S 8015B 2006-12-08		Prep Methoo Analyzed By	
Prep Batch:	28416		Sample Pre		2006-12-08		Prepared By	
1			RL	•				
Parameter	Flag		Result		Units		Dilution	F
GRO	1 1118		< 0.100		mg/L		1	0.10
						Spike	Percent	Recove
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolu	ene (TFT)		0.0947	mg/L	1	0.100	95	58.5 - 1
	robenzene (4-BFB)		0.0872	mg/L	3	0.100	87	66.8 - 1
Sample: 111	158 - HLSF-0085-F	IMW-017-12	206					
Analysis:	Volatiles WTS		Analytica	al Method	S 8260B		Prep Method	d: S 3510
OC Datala	22012		Data And		2006 12 0	n	Analyzad B	vi IG

Analysis:	Volatiles WTS	Analytical Method:	S 8260B	Prep Method:	S 3510C
QC Batch:	32812	Date Analyzed:	2006-12-09	Analyzed By:	JG
Prep Batch:	28544	Sample Preparation:	2006-12-09	Prepared By:	JG

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Bromochloromethane		<1.00	μg/L	1	1.00
Dichlorodifluoromethane		< 1.00	μ g/L	1	1.00
Chloromethane (methyl chloride)		<1.00	μ g/L	1	1.00
Vinyl Chloride		<1.00	$\mu { m g/L}$	1	1.00
Bromomethane (methyl bromide)		< 5.00	$\mu { m g/L}$	1	5.00
Chloroethane		< 1.00	μg/L	1	1.00
Trichlorofluoromethane		< 1.00	μ g/L	1	1.00
Acetone		< 10.0	μ g/L	1	10.0
Iodomethane (methyl iodide)		< 5.00	μg/L	<u> </u>	5.00

continued . . .

sample 111158 continued...

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Carbon Disulfide	8	<1.00	μg/L	1	1.00
Acrylonitrile		<1.00	μg/L	1	1.00
2-Butanone (MEK)		< 5.00	μg/L	1	5.00
4-Methyl-2-pentanone (MIBK)		< 5.00	μg/L	1	5.00
2-Hexanone		< 5.00	μg/L	1	5.00
trans 1,4-Dichloro-2-butene		<10.0	μg/L	ĺ	10.0
1,1-Dichloroethene		<1.00	μg/L	i	1.00
Methylene chloride		< 5.00	μg/L	1	5.00
MTBE		<1.00	μ g/L	1	1.00
trans-1,2-Dichloroethene		<1.00	μ g/L	1	1.00
1,1-Dichloroethane		<1.00	μg/L	1	1.00
cis-1,2-Dichloroethene		<1.00	μg/L	î	1.00
2,2-Dichloropropane		<1.00	μg/L	, 1	1.00
1,2-Dichloroethane (EDC)		<1.00	μg/L	Î	1.00
Chloroform		<1.00	μg/L	ĺ	1.00
1,1,1-Trichloroethane		<1.00	μg/L	1	1.00
1,1-Dichloropropene		<1.00	μg/L	1	1.00
Benzene		<1.00	μg/L	1	1.00
Carbon Tetrachloride		<1.00	μg/L	1	1.00
1,2-Dichloropropane		<1.00	μg/L	•	1.00
Trichloroethene (TCE)		<1.00	μg/L	1	1.00
Dibromomethane (methylene bromide)		<1.00	μg/L	1	1.00
Bromodichloromethane		<1.00	μg/L	ì	1.00
2-Chloroethyl vinyl ether		< 5.00	μg/L	1	5.00
cis-1,3-Dichloropropene		<1.00	μg/L	1	1.00
trans-1,3-Dichloropropene		<1.00	μg/L	1	1.00
Toluene		<1.00	μg/L	ì	1.00
1,1,2-Trichloroethane		<1.00	μg/L	1	1.00
1,3-Dichloropropane		<1.00	μg/L	1	1.00
Dibromochloromethane		<1.00	μg/L	1	1.00
1,2-Dibromoethane (EDB)		<1.00	μg/L	1	1.00
Tetrachloroethene (PCE)		<1.00	μg/L	1	1.00
Chlorobenzene		<1.00	μg/L	1	1.00
1,1,1,2-Tetrachloroethane		<1.00	μg/L μg/L	1	1.00
Ethylbenzene		<1.00	μg/L	1	1.00
m,p-Xylene		<1.00	μg/L μg/L	1	1.00
Bromoform		<1.00	μg/L	1	1.00
Styrene		<1.00	μg/L	1	1.00
o-Xylene		<1.00	μg/L	1	1.00
1,1,2,2-Tetrachloroethane		<1.00	μg/L	1	1.00
2-Chlorotoluene		<1.00	μg/L	1	1.00
1,2,3-Trichloropropane		<1.00	μg/L	1	1.00
Isopropylbenzene		<1.00	μg/L	1	1.00
Bromobenzene		<1.00	μg/L μg/L	1	1.00
n-Propylbenzene		<1.00	μg/L	1	1.00
1,3,5-Trimethylbenzene		<1.00	μg/L μg/L	ا. 1	1.00
tert-Butylbenzene		<1.00	μg/L μg/L	i ì	1.00
1,2,4-Trimethylbenzene		<1.00		i i	1.00
1,4-Dichlorobenzene (para)		<1.00	μg/L	J. 1	
1,7-Diemoropenzene (para)		<1.00	μg/L	1	1.00

continued . . .

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sample 111158 continued . . .

		RL			
Parameter	Flag	Result	Units	Dilution	RL
sec-Butylbenzene		<1.00	μg/L	1	1.00
1,3-Dichlorobenzene (meta)		<1.00	μ g/L	1	1.00
p-Isopropyltoluene		< 1.00	μ g/L	1	1.00
4-Chlorotoluene		< 1.00	μ g/L	1	1.00
1,2-Dichlorobenzene (ortho)		< 1.00	μ g/L	1	1.00
n-Butylbenzene		< 1.00	μ g/L	1	1.00
1,2-Dibromo-3-chloropropane		< 5.00	μ g/L	1	5.00
1,2,3-Trichlorobenzene		< 5.00	$\mu \mathrm{g/L}$	1	5.00
1,2,4-Trichlorobenzene		< 5.00	$\mu { m g/L}$	1	5.00
Naphthalene		< 5.00	μ g/L	1	5.00
Hexachlorobutadiene		< 5.00	μ g/L	1	5.00
Isopropyl Alcohol		< 5.00	μg/L	1	5.00
Tert-butyl Alcohol		< 5.00	μ g/L	1	5.00
1,4-Dioxane		< 5.00	μg/L	1	5.00

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Dibromofluoromethane		54.6	μg/L	l	50.0	109	82.4 - 115
Toluene-d8		54.0	$\mu \mathrm{g/L}$	1	50.0	108	89.7 - 108
4-Bromofluorobenzene (4-BFB)	2	41.1	$\mu { m g/L}$	1	50.0	82	84.6 - 114

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: Zn, Dissolved Analytical Method: S 6010B QC Batch: 32720 Date Analyzed: 2006-12-12 Prep Batch: 28394 Sample Preparation: 2006-12-08

RLFlag Parameter Dilution Result Units RLDissolved Zinc < 0.00500 mg/L 0.00500

Prep Method:

Analyzed By:

Prepared By:

Prep Method:

Analyzed By:

S 3005A

S 3010A

RR

TS

RR

TS

Sample: 111158 - HLSF-0085-HMW-017-1206

Analysis: Zn, Total Analytical Method: S 6010B QC Batch: 32745 Date Analyzed: 2006-12-12 Prep Batch: 28447 Sample Preparation: 2006-12-11

Prepared By: RL Parameter Flag Result Units Dilution RL Total Zinc < 0.00500 mg/L 0.00500

Sample: 111159 - HLSF-0085-TB-763-1206

Analysis: Analytical Method: Volatiles WTS S 8260B Prep Method: S 3510C QC Batch: 32812 Date Analyzed: Analyzed By: 2006-12-09 JG Prep Batch: 28544 Sample Preparation: 2006-12-09 Prepared By: JG

²8260 Only - One surrogate is out of control limits. The other two surrogates show the sample preparation was performed properly.

Dougnastau	F21	RL	1 Y. 74	TN:11. d	***
Parameter	Flag	Result	Units	Dilution	RL
Bromochloromethane		<1.00	$\mu \mathrm{g/L}$	1	1.00
Dichlorodifluoromethane		<1.00	$\mu \mathrm{g/L}$	1	1.00
Chloromethane (methyl chloride)		<1.00	μ g/L	1	1.00
Vinyl Chloride		<1.00	$\mu \mathrm{g/L}$	1	1.00
Bromomethane (methyl bromide)		< 5.00	$\mu \mathrm{g}/\mathrm{L}$)	5.00
Chloroethane		<1.00	μg/L	1	1.00
Trichlorofluoromethane		<1.00	μg/L	1	1.00
Acetone		<10.0	$\mu \mathrm{g/L}$	1	10.0
Iodomethane (methyl iodide)		< 5.00	μg/L	1	5.00
Carbon Disulfide		<1.00	μ g/L	1	1.00
Acrylonitrile		<1.00	μg/L	1	1.00
2-Butanone (MEK)		< 5.00	μ g/L	1	5.00
4-Methyl-2-pentanone (MIBK)		< 5.00	μ g/L	1	5.00
2-Hexanone		< 5.00	μg/L	ì	5.00
trans 1,4-Dichloro-2-butene		<10.0	$\mu \mathrm{g/L}$	1	10.0
1,1-Dichloroethene		<1.00	μ g/L	1	1.00
Methylene chloride		< 5.00	μg/L	1	5.00
MTBE		<1.00	μ g/L	1	1.00
trans-1,2-Dichloroethene		< 1.00	μg/L	1	1.00
1,1-Dichloroethane		< 1.00	μg/L	1	1.00
cis-1,2-Dichloroethene		< 1.00	μ g/L	1	1.00
2,2-Dichloropropane		<1.00	$\mu \mathrm{g/L}$	1	1.00
1,2-Dichloroethane (EDC)		<1.00	$\mu \mathrm{g/L}$	1	1.00
Chloroform		<1.00	μ g/L	1	1.00
1,1,1-Trichloroethane		< 1.00	μ g/L	1	1.00
1,1-Dichloropropene		<1.00	μ g/L	i	1.00
Benzene		<1.00	$\mu { m g/L}$	1	1.00
Carbon Tetrachloride		<1.00	μ g/L	1	1.00
1,2-Dichloropropane		<1.00	μ g/L	1	1.00
Trichloroethene (TCE)		<1.00	$\mu \mathrm{g}/\mathrm{L}$	1	1.00
Dibromomethane (methylene bromide)		<1.00	μ g/L	1	1.00
Bromodichloromethane		< 1.00	μg/L	1	1.00
2-Chloroethyl vinyl ether		< 5.00	μg/L	1	5.00
cis-1,3-Dichloropropene		< 1.00	μg/L	1	1.00
trans-1,3-Dichloropropene		< 1.00	µg/L	1	1.00
Toluene		< 1.00	μg/L	1	1.00
1,1,2-Trichloroethane		< 1.00	$\mu \mathrm{g}/\mathrm{L}$	1	1.00
1,3-Dichloropropane		< 1.00	$\mu \mathrm{g/L}$	1	1.00
Dibromochloromethane		< 1.00	μ g/L	1	1.00
1,2-Dibromoethane (EDB)		< 1.00	μ g/L	1	1.00
Tetrachloroethene (PCE)		<1.00	$\mu \mathrm{g/L}$	1	1.00
Chlorobenzene		< 1.00	μ g/L	1	1.00
1,1,1,2-Tetrachloroethane		< 1.00	$\mu \mathrm{g/L}$	1	1.00
Ethylbenzene		< 1.00	μ g/L	1	1.00
m,p-Xylene		< 1.00	μ g/L	1	1.00
Bromoform		<1.00	μg/L	1	1.00
Styrene		< 1.00	μ g/L	1	1.00
o-Xylene		< 1.00	μg/L	1	1.00
1,1,2,2-Tetrachloroethane		<1.00	μ g/L	1	1.00
2-Chlorotoluene		<1.00	μ g/L	1	1.00
1,2,3-Trichloropropane		< 1.00	μ g/L	1	1.00

contimued . . .

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sample 111159 continued ...

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Isopropylbenzene		<1.00	μg/L	1	1.00
Bromobenzene		< 1.00	μ g/L	1	1.00
n-Propylbenzene		<1.00	μ g/L	1	1.00
1,3,5-Trimethylbenzene		< 1.00	μ g/L	1	1.00
tert-Butylbenzene		< 1.00	μ g/L	1	1.00
1,2,4-Trimethylbenzene		< 1.00	μ g/L	1	1.00
1,4-Dichlorobenzene (para)		< 1.00	μ g/L	1	1.00
sec-Butylbenzene		<1.00	μ g/L	1	1.00
1,3-Dichlorobenzene (meta)		<1.00	$\mu {\sf g}/{\sf L}$	1	1.00
p-Isopropyltoluene		<1.00	μ g/L	1	1.00
4-Chlorotoluene		<1.00	μ g/L	1	1.00
1,2-Dichlorobenzene (ortho)		< 1.00	μ g/L	1	1.00
n-Butylbenzene		<1.00	μ g/L	1	1.00
1,2-Dibromo-3-chloropropane		< 5.00	μ g/L	1	5.00
1,2,3-Trichlorobenzene		< 5.00	μ g/L	1	5.00
1,2,4-Trichlorobenzene		< 5.00	μ g/L	1	5.00
Naphthalene		< 5.00	$\mu \mathrm{g/L}$	1	5.00
Hexachlorobutadiene		< 5.00	μ g/L	1	5.00
Isopropyl Alcohol		< 5.00	μ g/L	1	5.00
Tert-butyl Alcohol		< 5.00	μ g/L	1	5.00
1,4-Dioxane		< 5.00	μg/L	1	5.00

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Dibromofluoromethane		54.8	μg/L	1	50.0	110	82.4 - 115
Toluene-d8		54.2	μg/L	1	50.0	108	89.7 - 108
4-Bromofluorobenzene (4-BFB)	3	41.2	μ g/L	1	50.0	82	84.6 - 114

Method Blank (1) QC Batch: 32657

QC Batch: 32657 Date Analyzed: 20 Prep Batch: 28416 QC Preparation: 20

Date Analyzed: 2006-12-08 Analyzed By: KB QC Preparation: 2006-12-08 Prepared By: KB

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.0929	mg/L	1	0.100	93	77.2 - 124
4-Bromofluorobenzene (4-BFB)		0.0834	mg/L	1	0.100	83	58 - 111

Method Blank (1) QC Batch: 32665

QC Batch: 32665 Date Analyzed: 2006-12-09 Analyzed By: SP Prep Batch: 28422 QC Preparation: 2006-12-09 Prepared By: SP

³8260 Only - One surrogate is out of control limits. The other two surrogates show the sample preparation was performed properly.

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Parameter	Flag	Re	MDL Result				RL	
DRO			1.19		mg/L		5	
	VII.	** •	V=11	Spike	Percen		overy	
Surrogate n-Triacontane	Flag Result 12.7	Units mg/L	Dilution 1	Amount 15.0	Recove:	•	mits 132.3	
II- HIRCOILLAIC	12.7	mg/L	1	13.0			132.3	
Method Blank (1)	QC Batch: 32699							
QC Batch: 32699		Date Analyzed:	2006-12-08			Analyzed By:	DR	
Prep Batch: 28448		QC Preparation:	2006-12-08			Prepared By:	DR	
Parameter	Flag		MDL Result		Units		RL	
Specific Conductance	Flag		0.00		μMHOS/cm		- KL	
Method Blank (1)	QC Batch: 32702							
, ,	QC Daten. 32702							
QC Batch: 32702 Prep Batch: 28456		Date Analyzed: QC Preparation:	2006-12-11 2006-12-11			Analyzed By: Prepared By:	SM SM	
rrep batch: 26450		QC Freparation.	2000-12-11			richated by:	OIVI	
Danis	175		MDL		Y 1 '.		10 T	
Parameter Ammonia-N	Flag		Result <0.820		Units mg/L		RL	
/ X(11111O(1)(1-1)(mg/D		, L	
Method Blank (1)	QC Batch: 32715							
QC Batch: 32715		Date Analyzed:	2006-12-07			Analyzed By	: JG	
Prep Batch: 28464		QC Preparation:	2006-12-07			Prepared By:	JG	
			MDL					
Parameter	Fl	ag	Result		Units		RL	
Total Dissolved Solid			<5.00		mg/L		5	
Method Blank (1)	QC Batch: 32720							
QC Batch: 32720		Date Analyzed:	2006-12-12			Analyzed By:	RR	
Prep Batch: 28394		QC Preparation:				Prepared By:	TS	
			MDL					
Parameter District Actions	Flag		Result		Units		RL	
Dissolved Silver		<	0.000199		mg/L		0.002	

Method Blank (1) QC Batch: 32720

QC Batch: Date Analyzed: Analyzed By: RR 32720 2006-12-12 Prep Batch: 28394 QC Preparation: 2006-12-08 Prepared By: TS

Prep Batch: 28447

Work Order: 6120823

HELSTF Groundwater Samples

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Prepared By:

TS

MDL Parameter Result Units Flag RLDissolved Cadmium < 0.000577 mg/L 0.001 Method Blank (1) QC Batch: 32720 QC Batch: 32720 Date Analyzed: 2006-12-12 Analyzed By: RR Prep Batch: 28394 Prepared By: QC Preparation: 2006-12-08 TS MDL Parameter Result Units RL Flag Dissolved Chromium < 0.00357 mg/L 0.005 Method Blank (1) QC Batch: 32720 QC Batch: 32720 Date Analyzed: 2006-12-12 Analyzed By: RRPrep Batch: 28394 QC Preparation: 2006-12-08 Prepared By: TS **MDL** Units Parameter Flag Result RL Dissolved Copper < 0.00127 mg/L 0.0125 Method Blank (1) QC Batch: 32720 OC Batch: 32720 Date Analyzed: 2006-12-12 Analyzed By: RR Prep Batch: 28394 QC Preparation: 2006-12-08 Prepared By: TS **MDL** Parameter Flag Result Units RLDissolved Lead < 0.00398 mg/L 0.005 Method Blank (1) QC Batch: 32720 QC Batch: 32720 Date Analyzed: 2006-12-12 Analyzed By: RRPrep Batch: 28394 QC Preparation: 2006-12-08 Prepared By: TS **MDL** Parameter Flag Result Units RL Dissolved Zinc < 0.00300 0.005 mg/L Method Blank (1) QC Batch: 32745 QC Batch: 32745 Date Analyzed: 2006-12-12 Analyzed By: RR

QC Preparation:

2006-12-11

28447

Prep Batch:

Work Order: 6120823 HELSTF Groundwater Samples Page Number: 16 of 50

Prepared By:

TS

MDL Flag Parameter Result Units RL Total Silver < 0.000274 mg/L 0.002 Method Blank (1) QC Batch: 32745 QC Batch: 32745 Date Analyzed: 2006-12-12 Analyzed By: RR Prep Batch: 28447 QC Preparation: 2006-12-11 Prepared By: TS **MDL** Parameter Flag Result Units RL Total Cadmium < 0.000268 mg/L 0.001 Method Blank (1) QC Batch: 32745 QC Batch: 32745 Date Analyzed: 2006-12-12 Analyzed By: RR Prep Batch: 28447 QC Preparation: 2006-12-11 Prepared By: TS **MDL** Parameter Flag Result Units RL **Total Chromium** < 0.00357 mg/L 0.005 Method Blank (1) QC Batch: 32745 QC Batch: 32745 Date Analyzed: 2006-12-12 Analyzed By: RRPrep Batch: 28447 QC Preparation: 2006-12-11 Prepared By: TS **MDL** Parameter Flag Result Units RLTotal Copper < 0.00127 mg/L 0.005 Method Blank (1) QC Batch: 32745 OC Batch: 32745 Date Analyzed: 2006-12-12 Analyzed By: RRPrep Batch: 28447 QC Preparation: 2006-12-11 Prepared By: TS MDL Parameter Flag Result Units RL Total Phosphorous < 0.0229 mg/L 0.05 Method Blank (1) QC Batch: 32745 QC Batch: 32745 Date Analyzed: 2006-12-12 Analyzed By: RR

QC Preparation:

2006-12-11

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MDL Parameter Result Units RL Flag Total Lead < 0.00310 0.005 mg/L Method Blank (1) QC Batch: 32745 Date Analyzed: Analyzed By: QC Batch: 32745 2006-12-12 RRQC Preparation: 2006-12-11 Prepared By: TS Prep Batch: 28447 **MDL** Parameter Flag Result Units RL Total Zinc < 0.000666 0.005 mg/L Method Blank (1) QC Batch: 32769 OC Batch: 32769 Date Analyzed: 2006-12-13 Analyzed By: RRPrepared By: TS Prep Batch: 28394 QC Preparation: 2006-12-08 **MDL** Parameter Result Units RLFlag Dissolved Sodium < 0.261 mg/L Method Blank (1) QC Batch: 32812 QC Batch: 32812 Date Analyzed: 2006-12-09 Analyzed By: JG Prep Batch: 28544 QC Preparation: 2006-12-09 Prepared By: JG **MDL** Parameter Flag Result Units RL Bromochloromethane μg/L < 0.0699 1 Dichlorodifluoromethane < 0.0598 μ g/L 1 Chloromethane (methyl chloride) < 0.230 μ g/L Vinyl Chloride < 0.0902 μ g/L 5 Bromomethane (methyl bromide) < 0.740 μ g/L Chloroethane < 0.195 μ g/L I Trichlorofluoromethane < 0.160 μ g/L ĺ Acetone 10 < 0.854 μ g/L Iodomethane (methyl iodide) < 0.112 5 $\mu g/L$ Carbon Disulfide < 0.0764 $\mu \mathrm{g/L}$ Acrylonitrile < 0.184 μ g/L 2-Butanone (MEK) < 0.394 μ g/L 5 4-Methyl-2-pentanone (MIBK) 5 < 0.484 μ g/L 2-Hexanone < 0.0975 μ g/L 5 10 trans 1,4-Dichloro-2-butene < 0.420 $\mu g/L$ 1.1-Dichloroethene < 0.0736 μ g/L 1 Methylene chloride < 0.689 $\mu g/L$ 5 **MTBE** $\mu g/L$ 1 < 0.0504trans-1,2-Dichloroethene < 0.0598 μ g/L 1 < 0.0299 1,1-Dichloroethane μ g/L ١

continued ...

method blank continued . . .

method blank continued		MDL		
Parameter	Flag	Result	Units	RL
cis-1,2-Dichloroethene		< 0.101	μ g/L	1
2,2-Dichloropropane		< 0.0665	μ g/L	1
1,2-Dichloroethane (EDC)		< 0.0557	μ g/L	1
Chloroform		< 0.0475	μ g/L	1
1,1,1-Trichloroethane		< 0.0846	μ g/L	1
1,1-Dichloropropene		< 0.0423	μg/L	1
Benzene		< 0.0495	μ g/L	1
Carbon Tetrachloride		< 0.121	μg/L	1
1,2-Dichloropropane		< 0.0933	μ g/L	1
Trichloroethene (TCE)		< 0.0495	μg/L	1
Dibromomethane (methylene bromide)		< 0.0640	μg/L	1
Bromodichloromethane		< 0.0651	μg/L	1
2-Chloroethyl vinyl ether		< 0.0905	μg/L	5
cis-1,3-Dichloropropene		< 0.0640	$\mu \mathrm{g/L}$	1
trans-1,3-Dichloropropene		< 0.0504	μg/L	1
Toluene		0.370	μg/L	i
1,1,2-Trichloroethane		< 0.106	μg/L	1
1,3-Dichloropropane		< 0.0625	$\mu \mathrm{g/L}$	1
Dibromochloromethane		< 0.0791	$\mu \mathrm{g/L}$	1
1,2-Dibromoethane (EDB)		< 0.0460	μ g/L	1
Tetrachloroethene (PCE)		< 0.0696	μg/L	ī
Chlorobenzene		< 0.0217	μg/L	1
1,1,1,2-Tetrachloroethane		< 0.125	μg/L	i
Ethylbenzene		< 0.0566	μg/L	i
m,p-Xylene		< 0.0363	μg/L	}
Bromoform		< 0.0859	μg/L	1
Styrene		< 0.0394	μg/L	1
o-Xylene		< 0.0505	μg/L	1
1,1,2,2-Tetrachloroethane		< 0.0672	μg/L	1
2-Chlorotoluene		< 0.0283	μg/L	1
1,2,3-Trichloropropane		< 0.0679	μg/L	1
Isopropylbenzene		< 0.0406	μg/L	Î
Bromobenzene		< 0.103	μg/L	i
n-Propylbenzene		< 0.0423	μg/L	1
1,3,5-Trimethylbenzene		< 0.0557	μg/L	1
tert-Butylbenzene		< 0.0770	μg/L	î
1,2,4-Trimethylbenzene		< 0.0336	μg/L	1
1,4-Dichlorobenzene (para)		< 0.0672	μg/L	1
sec-Butylbenzene		< 0.0439	μg/L	1
1,3-Dichlorobenzene (meta)		< 0.0672	μg/L	1
p-Isopropyltoluene		< 0.0513	μg/L μg/L	1
4-Chlorotoluene		< 0.0460		1
		<0.0460 <0.0629	μg/L	1
1,2-Dichlorobenzene (ortho)		<0.0629	μg/L	1
n-Butylbenzene			μg/L	1
1,2-Dibromo-3-chloropropane		< 0.538	μg/L	5
1,2,3-Trichlorobenzene		< 0.504	μg/L	5
1,2,4-Trichlorobenzene		< 0.166	μg/L	5
Naphthalene		< 0.417	μg/L	5
Hexachlorobutadiene		< 0.176	$\mu g/L$	5
Isopropyl Alcohol		< 5.00	μg/L	5

continued...

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mathod	hlank	continued	
mennoa	mm	communea	

		MDL		
Parameter	Flag	Result	Units	RL
Tert-butyl Alcohol		< 5.00	μ g/L	5
1,4-Dioxane		< 5.00	μg/L	5

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Dibromofluoromethane	4	58.4	μg/L	<u> </u>	50.0	117	82.4 - 115
Toluene-d8		51.5	μ g/L	1	50.0	103	89.7 - 108
4-Bromofluorobenzene (4-BFB)		46.8	μ g/L	1	50.0	94	84.6 - 114

Method Blank (1)

QC Batch: 32825

QC Batch: 32825 Prep Batch: 28447 Date Analyzed: 2006-12-14 Analyzed By: RR TS

QC Preparation: 2006-12-11

Prepared By:

RL0.5

		MDL		
Parameter	Flag	Result	Units	
Total Sodium		< 0.0309	mg/L	

Method Blank (1)

QC Batch: 32955

QC Batch: 32955 Prep Batch: 28649 Date Analyzed: 2006-12-14 QC Preparation: 2006-12-12

Analyzed By: DS

Prepared By: DS

		MDL		
Parameter	Flag	Result	Units	RL
Pyridine		< 0.000235	mg/L	0.005
n-Nitrosodimethylamine		< 0.00143	mg/L	0.005
2-Picoline		< 0.000437	mg/L	0.005
Methyl methanesulfonate		< 0.000662	mg/L	0.005
Ethyl methanesulfonate		< 0.000990	mg/L	0.005
Phenol		< 0.000591	mg/L	0.005
Aniline		< 0.000774	mg/L	0.005
bis(2-chloroethyl)ether		< 0.00116	mg/L	0.005
2-Chlorophenol		< 0.00279	mg/L	0.005
1,3-Dichlorobenzene (meta)		< 0.000784	mg/L	0.005
1,4-Dichlorobenzene (para)		< 0.000820	mg/L	0.005
Benzyl alcohol		< 0.000607	mg/L	0.005
1,2-Dichlorobenzene (ortho)		< 0.000869	mg/L	0.005
2-Methylphenol		< 0.000950	mg/L	0.005
bis(2-chloroisopropyl)ether		< 0.00151	mg/L	0.005
4-Methylphenol / 3-Methylphenol		< 0.000782	mg/L	0.005
n-Nitrosodi-n-propylamine		< 0.00117	mg/L	0.005
Hexachloroethane		< 0.000738	mg/L	0.005
Acetophenone		< 0.00131	mg/L	0.005
Nitrobenzene		< 0.00121	mg/L	0.005
n-Nitrosopiperidine		< 0.00150	mg/L	0.005

continued . . .

⁴8260 Only - One surrogate is out of control limits. The other two surrogates show the sample preparation was performed properly.

method blank continued . . .

Parameter	Flag	MDL Result	Units	RL
Isophorone		< 0.00114	mg/L	0.005
2-Nitrophenol		< 0.00430	mg/L	0.005
2,4-Dimethylphenol		< 0.00110	mg/L	0.005
bis(2-chloroethoxy)methane		< 0.00126	mg/L	0.005
2,4-Dichlorophenol		< 0.00372	mg/L	0.005
1,2,4-Trichlorobenzene		< 0.00108	mg/L	0.005
Benzoic acid		< 0.000478	mg/L	0.005
Naphthalene		< 0.00123	mg/L	0.005
a,a-Dimethylphenethylamine		< 0.00316	mg/L	0.005
4-Chloroaniline		< 0.000998	mg/L	0.005
2,6-Dichlorophenol		< 0.00604	mg/L	0.01
Hexachlorobutadiene		< 0.00104	mg/L	0.005
n-Nitroso-di-n-butylamine		< 0.00159	mg/L	0.005
4-Chloro-3-methylphenol		< 0.00102	mg/L	0.005
2-Methylnaphthalene		< 0.00102	mg/L	0.005
1-Methylnaphthalene		< 0.00119	mg/L	0.005
1,2,4,5-Tetrachlorobenzene		< 0.00110	mg/L	0.005
Hexachlorocyclopentadiene		<0.00808	mg/L	0.005
2,4,6-Trichlorophenol		< 0.00538	mg/L	0.01
		< 0.00477	mg/L	0.005
2,4,5-Trichlorophenol		< 0.00477	mg/L	0.005
2-Chloronaphthalene		< 0.00110	mg/L	0.005
1-Chloronaphthalene		< 0.00110		0.005
2-Nitroaniline		<0.00103	mg/L	0.005
Dimethylphthalate		< 0.000832	mg/L	0.005
Acenaphthylene			mg/L	0.005
2,6-Dinitrotoluene		<0.00103 <0.000706	mg/L	0.005
3-Nitroaniline		< 0.000706	mg/L	0.003
Acenaphthene			mg/L	0.005
2,4-Dinitrophenol		< 0.00261	mg/L	0.005
Dibenzofuran		<0.000945	mg/L	0.003
Pentachlorobenzene		< 0.000907	mg/L	
4-Nitrophenol		< 0.00914	mg/L	0.025
2,4-Dinitrotoluene		< 0.000729	mg/L	0.005
1-Naphthylamine		<0.000928	mg/L	0.005
2,3,4,6-Tetrachlorophenol		< 0.00510	mg/L	0.01
2-Naphthylamine		< 0.00100	mg/L	0.005
Fluorene		< 0.000919	mg/L	0.005
4-Chlorophenyl-phenylether		< 0.000952	mg/L	0.005
Diethylphthalate		< 0.000816	mg/L	0.005
4-Nitroaniline		< 0.000622	mg/L	0.005
Diphenylhydrazine		< 0.000786	mg/L	0.005
4,6-Dinitro-2-methylphenol		< 0.00311	mg/L	0.005
Diphenylamine		< 0.000860	mg/L	0.005
4-Bromophenyl-phenylether		< 0.000871	mg/L	0.005
Phenacetin		< 0.000550	mg/L	0.005
Hexachlorobenzene		< 0.000920	mg/L	0.005
4-Aminobiphenyl		< 0.000934	mg/L	0.005
Pentachlorophenol		< 0.00539	mg/L	0.01
Anthracene		< 0.000826	mg/L	0.005
Pentachloronitrobenzene		< 0.000934	mg/L	0.005

method blank continued ...

		MDL		
Parameter	Flag	Result	Units	RL
Pronamide		< 0.000716	mg/L	0.005
Phenanthrene		< 0.000830	mg/L	0.005
Di-n-butylphthalate		< 0.000811	mg/L	0.005
Fluoranthene		< 0.000778	mg/L	0.005
Benzidine		< 0.0167	mg/L	0.025
Pyrene		< 0.00101	mg/L	0.005
p-Dimethylaminoazobenzene		< 0.000974	mg/L	0.005
Butylbenzylphthalate		< 0.000900	mg/L	0.005
Benzo(a)anthracene		< 0.000632	mg/L	0.005
3,3-Dichlorobenzidine		< 0.000938	mg/L	0.005
Chrysene		< 0.000937	mg/L	0.005
bis(2-ethylhexyl)phthalate		0.00790	mg/L	0.005
Di-n-octylphthalate		< 0.000689	mg/L	0.005
Benzo(b)fluoranthene		< 0.000492	mg/L	0.005
Benzo(k)fluoranthene		< 0.000887	mg/L	0.005
7,12-Dimethylbenz(a)anthracene		< 0.000687	mg/L	0.005
Benzo(a)pyrene		< 0.000712	mg/L	0.005
3-Methylcholanthrene		< 0.000641	mg/L	0.005
Dibenzo(a,j)acridine		< 0.000620	mg/L	0.005
Indeno(1,2,3-cd)pyrene		< 0.000655	mg/L	0.005
Dibenzo(a,h)anthracene		< 0.000684	mg/L	0.005
Benzo(g,h,i)perylene		< 0.000324	mg/L	0.005
2-Butoxy Ethanol		< 0.00150	mg/L	0.005

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
2-Fluorophenol		0.0238	mg/L	l	0.0800	30	15.6 - 49.6
Phenol-d5		0.0171	mg/L	1	0.0800	21	10.2 - 33.6
Nitrobenzene-d5		0.0551	mg/L	1	0.0800	69	46.7 - 112
2-Fluorobiphenyl		0.0591	mg/L	1	0.0800	74	44.4 - 108
2,4,6-Tribromophenol		0.0440	mg/L	1	0.0800	55	24.9 - 147
Terphenyl-d14		0.0718	mg/L	1	0.0800	90	25.6 - 143

Method Blank (1) QC Batch: 32998

QC Batch: 32998 Prep Batch: 28687 Date Analyzed: 2006-12-07 QC Preparation: 2006-12-07 Analyzed By: JR Prepared By: JR

Method Blank (1) QC Batch: 32998

QC Batch: 32998 Date Analyzed: 2006-12-07 Analyzed By: JR
Prep Batch: 28687 QC Preparation: 2006-12-07 Prepared By: JR

Specific Conductance

13700

13700

μMHOS/cm

0

6.7

Work Order: 6120823 HELSTF Groundwater Samples Page Number: 22 of 50

Parameter	Flag	MDL Result	Units		RL
Nitrite-N	1 Mg	< 0.0168	mg/L		0.1
			0		
Method Blank (1)	QC Batch: 32998				
QC Batch: 32998 Prep Batch: 28687		Date Analyzed: 2006-12-0' QC Preparation: 2006-12-0'		Analyzed By Prepared By:	
D	ni.	MDL			
Parameter	Flag	Result	Units		RL
Nitrate-N		<0.0168	mg/L		0.1
Method Blank (1)	QC Batch: 32998				
QC Batch: 32998		Date Analyzed: 2006-12-0		Analyzed By	
Prep Batch: 28687		QC Preparation: 2006-12-0	7	Prepared By:	JR
Parameter	Plan	MDL	T Too Sales		DY
Chloride	Flag	Result <0.0257	Units		RL 2
Fluoride		< 0.0168	mg/L mg/L		0.2
Sulfate		<0.0598	mg/L		1
Method Blank (1)	QC Batch: 33042				
QC Batch: 33042 Prep Batch: 28719		Date Analyzed: 2006-12-1: QC Preparation: 2006-12-1:		Analyzed By Prepared By:	
110p Daten. 20117		•	2	riepated by.	10
Parameter	Flag	MDL Result	Units		RL
Hydroxide Alkalinity	1105	<1.00	mg/L as CaCo3		IXL.
Carbonate Alkalinity		<1.00	mg/L as CaCo3		1
Bicarbonate Alkalinity	ý	< 4.00	mg/L as CaCo3		4
Total Alkalinity		<2.38	mg/L as CaCo3		4
Duplicates (1)					
QC Batch: 32699		Date Analyzed: 2006-12-08	3	Analyzed By:	DR
Prep Batch: 28448		QC Preparation: 2006-12-08		Prepared By:	DR
	Duplicate	Sample			RPD
Param Sacific Conductors	Result	Result Ur	nits Dilution	RPD	Limit

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Duplicates (1)

QC Batch: 32715 Prep Batch: 28464 Date Analyzed: 2006-12-07 QC Preparation: 2006-12-07

Analyzed By: JG Prepared By: JG

Duplicate Sample **RPD** Param Result Result Units Dilution **RPD** Limit Total Dissolved Solids 11600 12700 mg/L ī 9 20

Duplicates (1)

QC Batch: 32901 Prep Batch: 28609 Date Analyzed: 2006-12-07 QC Preparation: 2006-12-07 Analyzed By: JG Prepared By: JG

Duplicate Sample **RPD** Param Result Result Units Dilution **RPD** Limit 7.35 7.36 pΗ s.u. 0 20

Duplicates (1)

QC Batch: 33042 Prep Batch: 28719 Date Analyzed: 2006-12-12 QC Preparation: 2006-12-12 Analyzed By: JG Prepared By: JG

	Duplicate	Sample				RPD
Param	Result	Result	Units	Dilution	RPD	Limit
Hydroxide Alkalinity	< 1.00	<1.00	mg/L as CaCo3	j	0	6.3
Carbonate Alkalinity	< 1.00	< 1.00	mg/L as CaCo3	1	0	6.3
Bicarbonate Alkalinity	200	200	mg/L as CaCo3	j	0	6.3
Total Alkalinity	200	200	mg/L as CaCo3	l	0	6.3

Laboratory Control Spike (LCS-1)

QC Batch: 32657 Prep Batch: 28416 Date Analyzed: 2006-12-08 QC Preparation: 2006-12-08 Analyzed By: KB Prepared By: KB

LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit **GRO** 1.00 mg/L 1.00 < 0.0272 100 71.4 - 123

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

LCSD Spike Matrix Rec. RPD Param Result Units Dil. Amount Result Rec. Limit **RPD** Limit **GRO** 1.01 mg/L 1.00 < 0.0272 71.4 - 123 101 20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	0.0966	0.0945	mg/L]	0.100	97	94	73.8 - 122
4-Bromofluorobenzene (4-BFB)	0.0909	0.0918	mg/L	1	0.100	91	92	82.6 - 112

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Laboratory Control Spike (LCS-1)

QC Batch:

32665

Date Analyzed:

2006-12-09

Analyzed By:

Prep Batch: 28422

QC Preparation: 2006-12-09

Prepared By:

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO	27.1	mg/L	1	25.0	<1.19	108	73.2 - 123

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	26.1	mg/L	l	25.0	<1.19	104	73.2 - 123	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Triacontane	12.9	12.6	mg/L	1	15.0	86	84	57 - 132.3

Laboratory Control Spike (LCS-1)

QC Batch:

32702

Date Analyzed:

2006-12-11

Analyzed By: SM

Prep Batch: 28456

QC Preparation: 2006-12-11

Prepared By: SM

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Ammonia-N	4.82	mg/L	i	5.00	< 0.820	96	66 - 122

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Ammonia-N	5.04	mg/L	1	5.00	< 0.820	101	66 - 122	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

32720

Date Analyzed:

2006-12-12

Analyzed By: RR

Prep Batch: 28394

QC Preparation: 2006-12-08

Prepared By:

TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Silver	0.133	mg/L	1	0.125	< 0.000199	106	86.2 - 116

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Silver	0.132	mg/L	1	0.125	< 0.000199	106	86.2 - 116	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Laboratory Control Spike (LCS-1)

OC Batch:

32720 Prep Batch: 28394

Date Analyzed: QC Preparation:

2006-12-12 2006-12-08 Analyzed By: RR

Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Cadmium	0.264	mg/L	ī	0.250	< 0.000577	106	83.3 - 113

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Cadmium	0.263	mg/L	1	0.250	< 0.000577	105	83.3 - 113	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

32720

Date Analyzed:

2006-12-12

Analyzed By: RR

Prepared By: TS

Prep Batch: 28394

QC Preparation: 2006-12-08

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Chromium	0.111	mg/L	1	0.100	< 0.00357	111	83 - 112

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Chromium	0.109	mg/L	1	0.100	< 0.00357	109	83 - 112	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch:

32720

Date Analyzed:

2006-12-12

Analyzed By: RR

Prep Batch: 28394

QC Preparation: 2006-12-08 Prepared By: TS

LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Dissolved Copper 0.136 mg/L 0.125 < 0.00127 109 84.3 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Copper	0.137	mg/L	Ī	0.125	< 0.00127	110	84.3 - 114	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

32720

Date Analyzed:

2006-12-12

Analyzed By:

Prep Batch: 28394

QC Preparation: 2006-12-08 Prepared By:

RR TS

7

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Lead	0.502	mø/L	1	0.500	<0.00398	100	811-111

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Lead	0.504	mg/L	1	0.500	< 0.00398	101	81.1 - 111	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32720 Prep Batch: 28394 Date Analyzed: 2006-12-12 QC Preparation: 2006-12-08 Analyzed By: RR Prepared By: TS

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LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Limit Rec. Dissolved Zinc 0.247 < 0.00300 mg/L 0.250 99 84.7 - 113 1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Zinc	0.247	mg/L	1	0.250	< 0.00300	99	84.7 - 113	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32745 Prep Batch: 28447

Date Analyzed: 2006-12-12 QC Preparation: 2006-12-11

Analyzed By: RR Prepared By: TS

LCS Matrix Spike Rec. Param Result Units Dil. Result Amount Limit Rec. Total Silver 0.125 mg/L 0.125 < 0.000274 100 87.9 - 111

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Silver	0.123	mg/L	1	0.125	< 0.000274	98	87.9 - 111	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32745 Prep Batch: 28447 Date Analyzed: 2006-12-12 QC Preparation: 2006-12-11

Analyzed By: RR Prepared By: TS

LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Cadmium 0.250 mg/L 0.250 < 0.000268 86.8 - 110 100

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

LCSD Spike Matrix **RPD** Rec. Param Result Units Dil. Amount Result Rec. Limit **RPD** Limit Total Cadmium 0.249 0.250 mg/L < 0.000268 86.8 - 110 100 20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: 32745 Prep Batch: 28447

Date Analyzed: 2006-12-12 QC Preparation: 2006-12-11

Analyzed By: RRPrepared By: TS

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	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Chromium	0.112	mg/L	1	0.100	< 0.00357	112	86.5 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Chromium	0.110	mg/L	1	0.100	< 0.00357	110	86.5 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: 32745 Prep Batch: 28447

Date Analyzed: 2006-12-12 Analyzed By: RR TS

QC Preparation: 2006-12-11

Prepared By:

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Copper	0.126	mg/L	l	0.125	< 0.00127	101	83.4 - 117

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Copper	0.124	mg/L	1	0.125	< 0.00127	99	83.4 - 117	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: 32745 Prep Batch: 28447 Date Analyzed: 2006-12-12 QC Preparation: 2006-12-11

Analyzed By: RR Prepared By: TS

LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Phosphorous 0.479 0.500 < 0.0229 mg/L 96 87.3 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Phosphorous	0.453	mg/L	1	0.500	< 0.0229	91	87.3 - 114	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Laboratory Control Spike (LCS-1)

OC Batch:

Prep Batch: 28447

32745

Date Analyzed:

2006-12-12

QC Preparation: 2006-12-11 Analyzed By: RR

Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Lead	0.486	mg/L	1	0.500	< 0.00310	97	83 - 109

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Lead	0.476	mg/L	1	0.500	< 0.00310	95	83 - 109	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

32745 Prep Batch: 28447

Date Analyzed: QC Preparation:

2006-12-12 2006-12-11 Analyzed By: RR

Prepared By:

TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Zinc	0.247	mg/L	j	0.250	< 0.000666	99	82.9 - 109

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Zinc	0.243	mg/L	1	0.250	< 0.000666	97	82.9 - 109	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result,

Laboratory Control Spike (LCS-1)

OC Batch: Prep Batch: 28394

32769

Date Analyzed:

2006-12-13

Analyzed By: RR

QC Preparation: 2006-12-08

Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Sodium	48.8	mg/L	1	50.0	< 0.261	98	85 - 111

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Sodium	50.5	mg/L	1	50.0	< 0.261	101	85 - 111	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

32812

Date Analyzed:

2006-12-09

Analyzed By: JG

Prep Batch: 28544

QC Preparation: 2006-12-09

Prepared By:

JG

Work Order: 6120823

HELSTF Groundwater Samples

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
1,1-Dichloroethene	***************************************	45.2	μg/L	1	50.0	< 0.0736	90	83.4 - 114
Benzene		48.2	$\mu \mathrm{g/L}$	l	50.0	< 0.0495	96	83.5 - 115
Trichloroethene (TCE)	5	44.4	$\mu { m g/L}$	1	50.0	< 0.0495	89	91.3 - 111
Toluene		42.2	$\mu { m g}/{ m L}$	1	50.0	< 0.0736	84	82 - 110
Chlorobenzene		45.2	μg/L	1	50.0	< 0.0217	90	87.9 - 109

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
1,1-Dichloroethene	49.4	μg/L	1	50.0	< 0.0736	99	83.4 - 114	9	20
Benzene	50.3	μ g/L	1	50.0	< 0.0495	101	83.5 - 115	4	20
Trichloroethene (TCE)	49.4	$\mu { m g/L}$	1	50.0	< 0.0495	99	91.3 - 111	11	20
Toluene	46.4	μ g/L	1	50.0	< 0.0736	93	82 - 110	10	20
Chlorobenzene	49.5	$\mu \mathrm{g/L}$	1	50.0	< 0.0217	99	87.9 - 109	9	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Dibromofluoromethane	52,5	52.2	μg/L	1	50.0	105	104	82.4 - 115
Toluene-d8	52.5	52.7	$\mu \mathrm{g/L}$	1	50.0	105	105	89.7 - 108
4-Bromofluorobenzene (4-BFB)	48.6	49.6	$\mu \mathrm{g/L}$	1	50.0	97	99	84.6 - 114

Laboratory Control Spike (LCS-1)

QC Batch: 32825 Prep Batch: 28447 Date Analyzed: 2006-12-14 QC Preparation: 2006-12-11 Analyzed By: RR Prepared By:

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	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Sodium	58.7	mg/L]	50.0	< 0.0309	117	87.1 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Sodium	56.8	mg/L	1	50.0	< 0.0309	114	87.1 - 120	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32955 Prep Batch: 28649 Date Analyzed: 2006-12-14 QC Preparation: 2006-12-12 Analyzed By: DS Prepared By: DS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Phenol	0.0234	mg/L	<u> </u>	0.0800	< 0.000590	29	10 - 51.1
2-Chlorophenol	0.0632	mg/L	1	0.0800	< 0.00279	79	10 - 116
1,4-Dichlorobenzene (para)	0.0635	mg/L	1	0.0800	< 0.000817	79	10.7 - 109
continued						* * * * * * * * * * * * * * * * * * * *	

⁵Spike recovery out of control limits. RPD within limits showing extration was performed properly. •

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control spikes continued ...

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
n-Nitrosodi-n-propylamine	0.0878	mg/L	1	0.0800	< 0.00117	110	16.9 - 125
1,2,4-Trichlorobenzene	0.0751	mg/L	1	0.0800	< 0.00108	94	13.9 - 134
4-Chloro-3-methylphenol	0.0659	mg/L	1	0.0800	< 0.00102	82	13.3 - 141
Acenaphthene	0.0707	mg/L	1	0.0800	< 0.000990	88	34 - 120
4-Nitrophenol	0.0164	mg/L	1	0.0800	< 0.00914	20	12.8 - 106
2,4-Dinitrotoluene	0.0704	mg/L	1	0.0800	< 0.000729	88	40.5 - 142
Pentachlorophenol	0.0690	mg/L	1	0.0800	< 0.00539	86	10 - 152
Pyrene	0.0804	mg/L	1	0.0800	< 0.00101	100	47.2 - 151

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Phenol	0.0232	mg/L	l	0.0800	< 0.000590	29	10 - 51,1	i	20
2-Chlorophenol	0.0626	mg/L	1	0.0800	< 0.00279	78	10 - 116	1	20
1,4-Dichlorobenzene (para)	0.0623	mg/L	1	0.0800	< 0.000817	78	10.7 - 109	2	20
n-Nitrosodi-n-propylamine	0.0840	mg/L	1	0.0800	< 0.00117	105	16.9 - 125	4	20
1,2,4-Trichlorobenzene	0.0756	mg/L	1	0.0800	< 0.00108	94	13.9 - 134	1	20
4-Chloro-3-methylphenol	0.0676	mg/L	1	0.0800	< 0.00102	84	13.3 - 141	2	20
Acenaphthene	0.0704	mg/L	1	0.0800	< 0.000990	88	34 - 120	0	20
4-Nitrophenol	0.0167	mg/L	l	0.0800	< 0.00914	21	12.8 - 106	2	20
2,4-Dinitrotoluene	0.0720	mg/L	1	0.0800	< 0.000729	90	40.5 - 142	2	20
Pentachlorophenol	0.0703	mg/L	l	0.0800	< 0.00539	88	10 - 152	2	20
Pyrene	0.0806	mg/L	1	0.0800	< 0.00101	101	47.2 - 151	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate		LCS Result	LCSD Result	Units	Dil,	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
2-Fluorophenol		0.0345	0.0342	mg/L	1	0.0800	43	43	10 - 77.8
Phenol-d5		0.0245	0.0242	mg/L	1	0.0800	31	30	10 - 47
Nitrobenzene-d5		0.0861	0.0868	mg/L	1	0.0800	108	108	10 - 170
2-Fluorobiphenyl		0.0792	0.0785	mg/L	1	0.0800	99	98	10 - 200
2,4,6-Tribromophenol	67	0.0958	0.0930	mg/L	1	0.0800	120	116	29 - 99.9
Terphenyl-d14		0.0909	0.0902	mg/L	1	0.0800	114	113	10 - 179

Laboratory Control Spike (LCS-1)

QC Batch: 32998 Prep Batch: 28687

Date Analyzed: 2006-12-07 QC Preparation: 2006-12-07

Prepared By:

Analyzed By: JR

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Bromide	2.54	mg/L	1	2.50	< 0.0217	102	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued . . .

^{62,4,6-}Tribromophenol out of control limits for LCS/LCSD. Entire QC batch non-detect, bias high. •

⁷2,4,6-Tribromophenol out of control limits for LCS/LCSD. Entire QC batch non-detect, bias high. •

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control	snikes	continued

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromide	2.49	mg/L	1	2.50	< 0.0217	100	90 - 110	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32998 Prep Batch: 28687 Date Analyzed: 2006-12-07 QC Preparation: 2006-12-07 Analyzed By: JR Prepared By: JR

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Nitrite-N	2.51	mg/L	1	2.50	< 0.0168	100	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Nitrite-N	2.51	mg/L	1	2.50	< 0.0168	100	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32998 Prep Batch: 28687 Date Analyzed: 2006-12-07 QC Preparation: 2006-12-07

Analyzed By: JR Prepared By: JR

LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Limit Rec. Nitrate-N 2.51 2.50 < 0.0168 mg/L 100 90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Nitrate-N	2.51	mg/L	1	2.50	< 0.0168	100	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32998 Prep Batch: 28687 Date Analyzed: 2006-12-07 QC Preparation: 2006-12-07

Analyzed By: JR Prepared By: JR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	12.1	mg/L	1	12.5	< 0.0257	97	90 - 110
Fluoride	2.50	mg/L	1	2.50	< 0.0168	100	88.6 - 107
Sulfate	12.6	mg/L	1	12.5	< 0.0598	101	90 - 110

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Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	12.2	mg/L	1	12.5	< 0.0257	98	90 - 110	1	20
Fluoride	2.51	mg/L	l	2.50	< 0.0168	100	88.6 - 107	0	20
Sulfate	12.6	mg/L	1	12.5	< 0.0598	101	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 110939

QC Batch: 32657 Prep Batch: 28416

Date Analyzed:

QC Preparation:

2006-12-08 2006-12-08 Analyzed By: KB

Prepa

Prepared By: KB

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO	0.978	mg/L	1	1.00	< 0.0272	98	53.7 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO	1.03	mg/L	1	1.00	< 0.0272	103	53.7 - 136	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	0.0882	0.0940	mg/L	1	0.1	88	94	58.8 - 134
4-Bromofluorobenzene (4-BFB)	0.0858	0.0896	mg/L	1	0.1	86	90	68.5 - 128

Matrix Spike (MS-1) Spiked Sample: 110939

QC Batch: 32665 Prep Batch: 28422 Date Analyzed: 2 QC Preparation: 2

2006-12-09 2006-12-09 Analyzed By: SP Prepared By: SP

Rec. MS Spike Matrix Limit Result Units Dil. Amount Result Rec. Param <1.19 99 77.8 - 112 DRO 24.7 mg/L 25.0

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO .	23.9	mg/L	1	25.0	<1.19	96	77.8 - 112	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Triacontane	14.0	14.2	mg/L	1	15	93	95	57 - 132.3

Work Order: 6120823 **HELSTF** Groundwater Samples

Matrix Spike (MS-1) Spiked Sample: 111243

OC Batch: Prep Batch: 28456

Param

Ammonia-N

32702

Date Analyzed: QC Preparation:

Units

mg/L

2006-12-11

2006-12-11

Analyzed By: SM

Page Number: 33 of 50

Prepared By: SM

58 - 134

Dil.

Spike

Amount

5.00

Rec. Rec. Limit

95

Matrix

Result

< 0.820

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MS

Result

4.76

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Ammonia-N	4.82	mg/L	1	5.00	< 0.820	96	58 - 134	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 110862

OC Batch:

32720

Date Analyzed:

2006-12-12

Analyzed By: RR Prepared By:

Prep Batch: 28394

QC Preparation:

2006-12-08

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Silver	0.126	mg/L	i	0.125	< 0.000199	101	90.1 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Silver	0.127	mg/L	l	0.125	< 0.000199	102	90.1 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 110862

OC Batch: 32720 Date Analyzed:

2006-12-12

Analyzed By:

RR

Prep Batch: 28394

QC Preparation: 2006-12-08

Prepared By: TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Cadmium	0.243	mg/L	1	0.250	< 0.000577	97	75 - 112

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Cadmium	0.250	mg/L	1	0.250	< 0.000577	100	75 - 112	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 110862

Date Analyzed:

2006-12-12

Analyzed By:

TS

QC Batch: Prep Batch: 28394

32720

QC Preparation: 2006-12-08

Prepared By:

Page Number: 34 of 50

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Chromium	0.105	mg/L	1	0.100	< 0.00357	105	75 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Chromium	0.109	mg/L	1	0.100	< 0.00357	109	75 - 121	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 110862

QC Batch: 32720 Prep Batch: 28394 Date Analyzed: 2006-12-12 QC Preparation: 2006-12-08

Analyzed By: RR Prepared By: TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Copper	0.127	mg/L	l	0.125	< 0.00127	102	81.5 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Copper	0.129	mg/L	1	0.125	< 0.00127	103	81.5 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 110862

QC Batch: 32720 Prep Batch: 28394

Date Analyzed: 2006-12-12 QC Preparation: 2006-12-08

Analyzed By: RR Prepared By: TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Lead	0.443	mg/L	1	0.500	< 0.00398	89	75 - 111

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Đil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Lead	0.452	mg/L	1	0.500	< 0.00398	90	75 - 111	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 110862

QC Batch: 32720 Prep Batch: 28394 Date Analyzed: 2006-12-12 QC Preparation: 2006-12-08

Analyzed By: RR Prepared By: TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Zinc	0.245	mg/L	j	0.250	< 0.00300	98	80.4 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

MSD Spike Matrix **RPD** Rec. Param Result Units Dil. Amount Result Limit **RPD** Rec. Limit Dissolved Zinc 0.251 0.250 mg/L < 0.00300 80.4 - 120 100 20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 111245

OC Batch:

32745 Prep Batch: 28447 Date Analyzed:

2006-12-12

QC Preparation:

2006-12-11

Analyzed By:

Page Number: 35 of 50

Prepared By: TS

RR

RR

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Silver	0.115	mg/L	1	0.125	< 0.000274	92	88.2 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Silver	0.116	mg/L	1	0.125	< 0.000274	93	88.2 - 114	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 111245

QC Batch: Prep Batch: 28447

32745

Date Analyzed: QC Preparation:

2006-12-12 2006-12-11

Analyzed By:

Prepared By: TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Cadmium	0.185	mg/L	}	0.250	< 0.000268	74	66.5 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Cadmium	0.203	mg/L	1	0.250	< 0.000268	81	66.5 - 121	9	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 111245

OC Batch: Prep Batch: 28447

32745

Date Analyzed: QC Preparation: 2006-12-12

2006-12-11

Analyzed By: RR

Prepared By: TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Chromium	0.0840	mg/L	****	0.100	< 0.00357	84	69.2 - 129

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Chromium	0.0860	mg/L	<u>l</u>	0.100	< 0.00357	86	69.2 - 129	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Work Order: 6120823 **HELSTF** Groundwater Samples

Matrix Spike (MS-1) Spiked Sample: 111245

QC Batch:

32745

Date Analyzed:

2006-12-12

QC Preparation:

2006-12-11

Analyzed By: RR

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TS

Prep Batch: 28447

Prepared By:

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Copper	0.114	mg/L	1	0.125	< 0.00127	91	83.8 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Copper	0.115	mg/L	-	0.125	< 0.00127	92	83.8 - 118	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 111245

QC Batch: 32745 Date Analyzed:

2006-12-12

Analyzed By: RR

TS

RR

Prep Batch: 28447

QC Preparation:

2006-12-11

Prepared By:

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Phosphorous 0.422 0.500 < 0.0229 mg/L 84 70.1 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Phosphorous	0.401	mg/L	1	0.500	< 0.0229	80	70.1 - 115	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-I)

Spiked Sample: 111245

QC Batch:

32745

Date Analyzed:

2006-12-12

Analyzed By:

Prep Batch: 28447

QC Preparation: 2006-12-11

Prepared By: TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Lead	0.441	mg/L	1	0.500	< 0.00310	88	71.9 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Lead	0.449	mg/L	ì	0.500	< 0.00310	90	71.9 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111245

OC Batch:

32745

Date Analyzed:

2006-12-12

Analyzed By: RR TS

Prep Batch: 28447

QC Preparation:

2006-12-11

Prepared By:

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	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Zinc	0.216	mg/L	1	0.250	< 0.000666	86	75.5 - 113

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Zinc	0.224	mg/L	l	0.250	< 0.000666	90	75.5 - 113	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 110862

QC Batch: 32769 Prep Batch: 28394 Date Analyzed: 2006-12-13 QC Preparation: 2006-12-08

Analyzed By: RR Prepared By: TS

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Limit Rec. Dissolved Sodium 167 mg/L 50.0 116 102 81.8 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Sodium	167	mg/L	1	50.0	116	102	81.8 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111158

QC Batch: 32812 Prep Batch: 28544 Date Analyzed: 2006-12-09 QC Preparation: 2006-12-09

Analyzed By: JG Prepared By: JG

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit 1,1-Dichloroethene 50.8 μ g/L 50.0 < 0.0736 102 78.7 - 119 Benzene 53.7 50.0 < 0.0495 107 75.8 - 125 μg/L 1 Trichloroethene (TCE) 51.6 50.0 103 83.6 - 112 $\mu g/L$ 1 < 0.049596 Toluene 47.9 $\mu g/L$ Ì 50.0 < 0.0736 81.6 - 115 Chlorobenzene 52.2 $\mu g/L$ 1 50.0 < 0.0217 104 83.9 - 113

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MSD			Spike	Matrix		Rec.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
1,1-Dichloroethene	8	n/a	μg/L	1	50.0	< 0.0736	0	78.7 - 119	200	20
Benzene	9	n/a	$\mu \mathrm{g/L}$	1	50.0	< 0.0495	0	75.8 - 125	200	20
Trichloroethene (TCE)	10	n/a	μg/L	1	50.0	< 0.0495	0	83.6 - 112	200	20
Toluene	11	n/a	μg/L	1	50.0	< 0.0736	0	81.6 - 115	200	20

continued . . .

⁸RPD is out of range because a matrix spike duplicate was not prepared.

⁹RPD is out of range because a matrix spike duplicate was not prepared.

¹⁰RPD is out of range because a matrix spike duplicate was not prepared.

¹¹RPD is out of range because a matrix spike duplicate was not prepared.

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matrix spikes continued ...

,		MSD			Spike	Matrix		Rec.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chlorobenzene	12	n/a	μg/L	1	50.0	< 0.0217	0	83.9 - 113	200	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MS	MSD			Spike	MS	MSD	Rec.
Surrogate		Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Dibromofluoromethane	13	51.8	n/a	μg/L	1	50	104	0	86.6 - 114
Toluene-d8	14	52.7	n/a	μ g/L	1	50	105	0	91 - 109
4-Bromofluorobenzene (4-BFB)	15	49.1	n/a	μ g/L	1	50	98	0	87.2 - 113

Matrix Spike (MS-1) Spiked Sample: 111245

QC Batch: Prep Batch: 28447

32825

Date Analyzed: QC Preparation:

2006-12-14 2006-12-11

Analyzed By: RR

Prepared By: TS

MS Spike Matrix Rec. Param Amount Result Limit Result Units Dil. Rec. Total Sodium 2340 50.0 2290 100 75 - 125 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Sodium	2340	mg/L	1	50.0	2290	100	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111156

OC Batch: 32998 Date Analyzed:

2006-12-07

Analyzed By: Prepared By: JR

Prep Batch: 28687

QC Preparation:

2006-12-07

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Bromide	1260	mg/L	500	1250	<10.8	101	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Bromide	1260	mg/L	500	1250	<10.8	101	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111156

QC Batch: 32998 Date Analyzed:

2006-12-07

Analyzed By: JR

Prep Batch:

28687

QC Preparation:

2006-12-07

Prepared By: JR

¹²RPD is out of range because a matrix spike duplicate was not prepared.

¹³RPD is out of range because a matrix spike duplicate was not prepared.

¹⁴RPD is out of range because a matrix spike duplicate was not prepared.

¹⁵RPD is out of range because a matrix spike duplicate was not prepared.

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	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Nitrite-N	1250	mg/L	500	1250	< 8.40	100	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Nitrite-N	1250	mg/L	500	1250	< 8.40	100	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111156

QC Batch: 32998 Prep Batch: 28687 Date Analyzed: 2006-12-07 QC Preparation: 2006-12-07 Analyzed By: JR Prepared By: JR

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Nitrate-N 1470 mg/L 500 1250 314 92 78.6 - 105

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Nitrate-N	1470	mg/L	500	1250	314	92	78.6 - 105	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111156

QC Batch: 32998 Prep Batch: 28687 Date Analyzed: 2006-12-07 QC Preparation: 2006-12-07

Analyzed By: JR Prepared By: JR

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Limit Rec. Chloride 16200 mg/L 500 98 6250 10100 90 - 110Fluoride 1250 mg/L 500 1250 < 8.40 100 89.9 - 104 16 Sulfate 22800 mg/L 500 6250 17300 88 90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	16200	mg/L	500	6250	10100	98	90 - 110	0	20
Fluoride	1260	mg/L	500	1250	< 8.40	101	89.9 - 104	1	20
Sulfate	22900	mg/L	500	6250	17300	90	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 32657

Date Analyzed: 2006-12-08

Analyzed By: KB

¹⁶Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Specific Conductance

Work Order: 6120823 HELSTF Groundwater Samples Page Number: 40 of 50

-								
			ICVs	ICVs		ICVs	Percent	
			True	Found		Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.		Recovery	Limits	Analyzed
GRO		mg/L	1.00	0.957		96	85 - 115	2006-12-08
Standard ((CCV-1)							
QC Batch:	32657		Date	Analyzed: 2	2006-12-08		Ana	lyzed By: KB
			CCVs	CCVs	S	CCVs	Percent	
			True	Found	i l	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc		Recovery	Limits	Analyzed
GRO		mg/L	1.00	0.971		97	85 - 115	2006-12-08
Standard (TCV-1)							
QC Batch:			Date	Analyzed: 2	2006-12-09)	An	alyzed By: SP
·			ICVs	ICIV.		IOV.		
				ICVs		ICVs	Percent	TD = 4 =
Danana	171 a a	Ytudan	True	Found		Percent	Recovery	Date
Param DRO	Flag	Units	Conc. 250	Conc 282	r	Recovery 113	Limits 85 - 115	Analyzed 2006-12-09
DIO		mg/L	230	202		113	65-115	2000-12-09
Standard ((CCV-I)							
QC Batch:	32665		Date	Analyzed: 2	2006-12-09)	An	alyzed By: SP
			CCVs	CCV:	S	CCVs	Percent	
			True	Found	d	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc		Recovery	Limits	Analyzed
DRO		mg/L	250	262		105	85 - 115	2006-12-09
Standard ((ICV-1)							
QC Batch:	32699		Date	Analyzed: 2	2006-12-08		Ana	dyzed By: DR
				ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param		Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Specific Co	onductance		μMHOS/cm	1410	1410	100	96.7 - 108	2006-12-08

Standard ((CCV-1)							
QC Batch:	32699		Date	Analyzed: 2	2006-12-08		Ana	alyzed By: DR
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param		Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed

 μ MHOS/cm

1410

1410

100

96.7 - 108

2006-12-08

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Standard (ICV-1)

QC Batch: 32702

Date Analyzed: 2006-12-11

Analyzed By: SM

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Ammonia-N		mg/L	5.00	4.87	97	85 - 115	2006-12-11

Standard (CCV-1)

QC Batch: 32702

Date Analyzed: 2006-12-11

Analyzed By: SM

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Ammonia-N		mg/L	5.00	4.98	100	85 - 115	2006-12-11

Standard (ICV-1)

QC Batch: 32715

Date Analyzed: 2006-12-07

Analyzed By: JG

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Dissolved Solids		mg/L	1000	1020	102	94.4 - 106	2006-12-07

Standard (CCV-1)

QC Batch: 32715

Date Analyzed: 2006-12-07

Analyzed By: JG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Dissolved Solids		mg/L	1000	1020	102	94.4 - 106	2006-12-07

Standard (ICV-1)

QC Batch: 32720

Date Analyzed: 2006-12-12

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Silver		mg/L	0.125	0.132	106	90 - 110	2006-12-12

Standard (ICV-1)

QC Batch: 32720

Date Analyzed: 2006-12-12

Analyzed By: RR

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Report L	Date: .	lanuary	5,	200
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Param

Dissolved Silver

Flag

Units

mg/L

7	<i>,</i>		HELSTF Gro	undwater Sam	oles		
Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Cadmium	1 415	mg/L	1.00	1.04	104	95 - 105	2006-12-12
Standard (ICV-1)							
QC Batch: 32720			Date Analyzed:	2006-12-12		Ana	lyzed By: RR
_			ICVs True	ICVs Found	ICVs Percent	Percent Recovery	Date
Param Disable of Change in the	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Chromium		mg/L	1.00	1.04	104	90 - 110	2006-12-12
Standard (ICV-1)							
QC Batch: 32720			Date Analyzed:	2006-12-12		Ana	ilyzed By: RR
			ICVs True	ICVs Found	ICVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Copper		mg/L	1.00	1.03	103	90 - 110	2006-12-12
Standard (ICV-1) QC Batch: 32720			Date Analyzed:	2006-12-12		. Ana	ılyzed By: RR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Lead		mg/L	1.00	1.05	105	90 - 110	2006-12-12
Standard (ICV-1)							
QC Batch: 32720			Date Analyzed:	2006-12-12		Ana	alyzed By: RR
			ICVs	ICVs	ICVs	Percent	v 5.
Param	Elaa	Units	True Conc.	Found Conc.	Percent Recovery	Recovery Limits	Date
Dissolved Zinc	Flag	mg/L	1.00	1.08	108	90 - 110	Analyzed 2006-12-12
Standard (CCV-1)							
QC Batch: 32720			Date Analyzed:			Ana	alyzed By: RR
			CCVs	CCVs	CCVs	Percent	
			Truo	Eound	Dargant	Daggyary	Doto

True

Conc.

0.125

Found

Conc.

0.130

Percent

Recovery

104

Recovery

Limits

90 - 110

Date Analyzed 2006-12-12

Work Order: 6120823 HELSTF Groundwater Samples Page Number: 43 of 50

Standard (CCV-1)

QC Batch: 32720

Date Analyzed: 2006-12-12

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Cadmium		mg/L	1.00	1.01	101	90 - 110	2006-12-12

Standard (CCV-1)

QC Batch: 32720

Date Analyzed: 2006-12-12

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Chromium		mg/L	1.00	1.01	101	90 - 110	2006-12-12

Standard (CCV-1)

QC Batch: 32720

Date Analyzed: 2006-12-12

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	D-4-
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Copper		mg/L	1.00	1.01	101	90 - 110	2006-12-12

Standard (CCV-1)

QC Batch: 32720

Date Analyzed: 2006-12-12

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Lead		mg/L	1.00	1.01	101	90 - 110	2006-12-12

Standard (CCV-1)

QC Batch: 32720

Date Analyzed: 2006-12-12

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Zinc		mg/L	1.00	1.06	106	90 - 110	2006-12-12

Standard (ICV-1)

QC Batch: 32745

Date Analyzed: 2006-12-12

Analyzed By: RR

Work Order: 6120823 **HELSTF** Groundwater Samples Page Number: 44 of 50

			·····				·····
Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Silver		mg/L	0.125	0.126	101	90 - 110	2006-12-12
Standard (ICV-1)							
QC Batch: 32745			Date Analyz	zed: 2006-12-	12	Ana	lyzed By: RR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Cadmium		mg/L	1.00	0.991	99	90 - 110	2006-12-12
Standard (ICV-1)							
QC Batch: 32745			Date Analyz	zed: 2006-12-	12	Ana	lyzed By: RR
			lCVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Chromium		mg/L	1.00	0.995	100	90 - 110	2006-12-12
Standard (ICV-1)							
QC Batch: 32745			Date Analyz	zed: 2006-12-	12	Ana	lyzed By: RR
			•				lyzed By: RR
			lCVs	ICVs	12 ICVs Percent	Percent	
	Flag	Units	•		ICVs		lyzed By: RR Date Analyzed
QC Batch: 32745	Flag	Units mg/L	ICVs True	ICVs Found	ICVs Percent	Percent Recovery	Date Analyzed
QC Batch: 32745	Flag		ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
QC Batch: 32745 Param Total Copper Standard (ICV-1)			ICVs True Conc.	ICVs Found Conc. 0.979	ICVs Percent Recovery 98	Percent Recovery Limits 90 - 110	Date Analyzed
QC Batch: 32745 Param Total Copper			ICVs True Conc.	ICVs Found Conc. 0.979	ICVs Percent Recovery 98	Percent Recovery Limits 90 - 110	Date Analyzed 2006-12-12
QC Batch: 32745 Param Total Copper Standard (ICV-1)			ICVs True Conc. 1.00 Date Analyz	ICVs Found Conc. 0.979	ICVs Percent Recovery 98	Percent Recovery Limits 90 - 110	Date Analyzed 2006-12-12
Param Total Copper Standard (ICV-1) QC Batch: 32745 Param			ICVs True Conc. 1.00 Date Analyz ICVs True Conc.	ICVs Found Conc. 0.979 zed: 2006-12- ICVs Found Conc.	ICVs Percent Recovery 98 12 ICVs Percent Recovery	Percent Recovery Limits 90 - 110 Ana Percent Recovery Limits	Date Analyzed 2006-12-12 alyzed By: RR Date Analyzed
Param Total Copper Standard (ICV-1) QC Batch: 32745		mg/L	ICVs True Conc. 1.00 Date Analyz ICVs True	ICVs Found Conc. 0.979 zed: 2006-12- ICVs Found	ICVs Percent Recovery 98 12 ICVs Percent	Percent Recovery Limits 90 - 110 Ana Percent Recovery	Date Analyzed 2006-12-12 alyzed By: RR Date Analyzed
Param Total Copper Standard (ICV-1) QC Batch: 32745 Param		mg/L Units	ICVs True Conc. 1.00 Date Analyz ICVs True Conc.	ICVs Found Conc. 0.979 zed: 2006-12- ICVs Found Conc.	ICVs Percent Recovery 98 12 ICVs Percent Recovery	Percent Recovery Limits 90 - 110 Ana Percent Recovery Limits	Date Analyzed 2006-12-12 alyzed By: RR Date
Param Total Copper Standard (ICV-1) QC Batch: 32745 Param Total Phosphorous	Flag	mg/L Units	ICVs True Conc. 1.00 Date Analyz ICVs True Conc. 5.00	ICVs Found Conc. 0.979 zed: 2006-12- ICVs Found Conc.	ICVs Percent Recovery 98 12 ICVs Percent Recovery 98	Percent Recovery Limits 90 - 110 Ana Percent Recovery Limits 90 - 110	Date Analyzed 2006-12-12 alyzed By: RR Date Analyzed
Param Total Copper Standard (ICV-1) QC Batch: 32745 Param Total Phosphorous Standard (ICV-1)	Flag	mg/L Units	ICVs True Conc. 1.00 Date Analyz ICVs True Conc. 5.00	ICVs Found Conc. 0.979 zed: 2006-12- ICVs Found Conc. 4.90	ICVs Percent Recovery 98 12 ICVs Percent Recovery 98	Percent Recovery Limits 90 - 110 Ana Percent Recovery Limits 90 - 110	Date Analyzed 2006-12-12 alyzed By: RR Date Analyzed 2006-12-12
Param Total Copper Standard (ICV-1) QC Batch: 32745 Param Total Phosphorous Standard (ICV-1)	Flag	mg/L Units	ICVs True Conc. 1.00 Date Analyz ICVs True Conc. 5.00	ICVs Found Conc. 0.979 zed: 2006-12- ICVs Found Conc. 4.90	ICVs Percent Recovery 98 12 ICVs Percent Recovery 98	Percent Recovery Limits 90 - 110 Ana Percent Recovery Limits 90 - 110	Date Analyzed 2006-12-12 alyzed By: RR Date Analyzed 2006-12-12
Param Total Copper Standard (ICV-1) QC Batch: 32745 Param Total Phosphorous Standard (ICV-1)	Flag	mg/L Units	ICVs True Conc. 1.00 Date Analyz ICVs True Conc. 5.00 Date Analyz ICVs	ICVs Found Conc. 0.979 zed: 2006-12- ICVs Found Conc. 4.90 zed: 2006-12- ICVs	ICVs Percent Recovery 98 12 ICVs Percent Recovery 98	Percent Recovery Limits 90 - 110 Ana Percent Recovery Limits 90 - 110 Ana Percent	Date Analyzed 2006-12-12 alyzed By: RR Date Analyzed 2006-12-12

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Standard (ICV-1)

QC Batch: 32745

Date Analyzed: 2006-12-12

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Zinc		mg/L	1.00	1.04	104	90 - 110	2006-12-12

Standard (CCV-1)

QC Batch: 32745

Date Analyzed: 2006-12-12

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Silver		mg/L	0.125	0.127	102	90 - 110	2006-12-12

Standard (CCV-1)

QC Batch: 32745

Date Analyzed: 2006-12-12

Analyzed By: RR

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Cadmium		mg/L	1.00	0.988	99	90 - 110	2006-12-12

Standard (CCV-1)

QC Batch: 32745

Date Analyzed: 2006-12-12

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Chromium		mg/L	1.00	0.990	99	90 - 110	2006-12-12

Standard (CCV-1)

QC Batch: 32745

Date Analyzed: 2006-12-12

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Copper		mg/L	1.00	0.978	98	90 - 110	2006-12-12

Standard (CCV-1)

QC Batch: 32745

Date Analyzed: 2006-12-12

Analyzed By: RR

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continued . . .

					r	·	
			con.	CCV-	COX	D	
			CCVs True	CCVs	CCVs	Percent	Data
Param	Flag	Units	Conc.	Found Conc.	Percent	Recovery Limits	Date
Total Phosphorous	riag	mg/L	5.00	4.91	Recovery 98	90 - 110	Analyzed 2006-12-12
Total I nosphorous		mg/L	3.00	4.71	78	90 - 110	2000-12-12
Standard (CCV-1))						
QC Batch: 32745			Date Analyzed:	2006-12-12		Ana	lyzed By: RR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units		Conc.	Recovery	Limits	Analyzed
Total Lead		mg/L	1.00	0.993	99	90 - 110	2006-12-12
Standard (CCV-1))						
QC Batch: 32745			Date Analyzed:	2006-12-12		Ana	lyzed By: RR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Zinc		mg/L	1.00	1.04	104	90 - 110	2006-12-12
Standard (ICV-1)							
QC Batch: 32769	•		Date Analyzed	2006-12-13		Ana	lyzed By: RR
			ICVs	lCVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag		Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Sodium		mg/L	50.0	51.5	103	90 - 110	2006-12-13
Standard (CCV-1))						
QC Batch: 32769	1		Date Analyzed	2006-12-13		Ana	lyzed By: RR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Sodium		mg/L	50.0	49.4	99	90 - 110	2006-12-13
Standard (CCV-1))						
QC Batch: 32812	!		Date Analyzed	: 2006-12-09		An	alyzed By: JG
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Fl		***************************************	Conc.	Recovery	Limits	Analyzed
Vinyl Chloride		μg/L	50.0	59.4	119	80 - 120	2006-12-09
1,1-Dichloroethene	.	μ g/L	50.0	51.9	104	80 - 120	2006-12-09
Chloroform	•	μg/L	50.0	52.6	105	80 - 120	2006-12-09

HELSTF Groundwater Samples

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standard	continued	_		
Stor Foreir Cr	COMMITTERCO	•	•	•

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
1,2-Dichloropropane		μg/L	50.0	53.5	107	80 - 120	2006-12-09
Toluene		μ g/L	50.0	48.7	97	80 - 120	2006-12-09
Chlorobenzene		μ g/L	50.0	51.7	103	80 - 120	2006-12-09
Ethylbenzene		μ g/L	50.0	53.3	107	80 - 120	2006-12-09

Standard (ICV-1)

QC Batch: 32825

Date Analyzed: 2006-12-14

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc,	Conc.	Recovery	Limits	Analyzed
Total Sodium		mg/L	50.0	51.5	103	90 - 110	2006-12-14

Standard (CCV-1)

QC Batch: 32825

Date Analyzed: 2006-12-14

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Cone.	Recovery	Limits	Analyzed
Total Sodium		mg/L	50.0	48.9	98	90 - 110	2006-12-14

Standard (ICV-1)

QC Batch: 32901

Date Analyzed: 2006-12-07

Analyzed By: JG

			ICVs True	ICVs Found	ICVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
pH		s.u.	7.00	7.00	100	98.8 - 101	2006-12-07

Standard (CCV-1)

QC Batch: 32901

Date Analyzed: 2006-12-07

Analyzed By: JG

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
pH		s.u.	7.00	7.00	100	98.8 - 101	2006-12-07

Standard (CCV-1)

QC Batch: 32955

Date Analyzed: 2006-12-14

Analyzed By: DS

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Phenol	, , , , , , , , , , , , , , , , , , , ,	mg/L	60.0	67.1	112	80 - 120	2006-12-14
1,4-Dichlorobenzene (para)		mg/L	60.0	61.2	102	80 - 120	2006-12-14
2-Nitrophenol		mg/L	60.0	65.1	108	80 - 120	2006-12-14
2,4-Dichlorophenol		mg/L	60.0	71.1	118	80 - 120	2006-12-14
Hexachlorobutadiene		mg/L	60.0	64.5	108	80 - 120	2006-12-14
4-Chloro-3-methylphenol		mg/L	60.0	58.9	98	80 - 120	2006-12-14
2,4,6-Trichlorophenol		mg/L	60.0	64.0	107	80 - 120	2006-12-14
Acenaphthene		mg/L	60.0	60.4	101	80 - 120	2006-12-14
Diphenylamine		mg/L	60.0	61.1	102	80 - 120	2006-12-14
Pentachlorophenol		mg/L	60.0	67.2	112	80 - 120	2006-12-14
Fluoranthene		mg/L	60.0	61.5	102	80 - 120	2006-12-14
Di-n-octylphthalate		mg/L	60.0	54.5	91	80 - 120	2006-12-14
Benzo(a)pyrene		mg/L	60.0	65.0	108	80 - 120	2006-12-14

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limit
2-Fluorophenol		62.8	mg/L	l	60.0	105	80 - 120
Phenol-d5		66.5	mg/L	1	60.0	111	80 - 120
Nitrobenzene-d5		65.7	mg/L	1	60.0	110	80 - 120
2-Fluorobiphenyl		61.0	mg/L	1	60.0	102	80 - 120
2,4,6-Tribromophenol	17	78.3	mg/L	1	60.0	130	80 - 120
Terphenyl-d14		65.5	mg/L	1	60.0	109	80 - 120

Standard (ICV-1)

QC Batch: 32998

Date Analyzed: 2006-12-07

Analyzed By: JR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Bromide		mg/L	2.50	2.42	97	93.2 - 98.5	2006-12-07

Standard (ICV-1)

QC Batch: 32998

Date Analyzed: 2006-12-07

Analyzed By: JR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Nitrite-N		mg/L	2.50	2.42	97	90 - 110	2006-12-07

Standard (ICV-1)

QC Batch: 32998

Date Analyzed: 2006-12-07

Analyzed By: JR

¹⁷2,4,6-Tribromophenol outside of control limits on CCV(ICV). CCV(ICV) component average is 107% which is within acceptable range. This is acceptable by Method

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continued . . .

Param Nitrate-N	Flag	Units mg/L	ICVs True Conc. 2.50	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits 90 - 110	Date Analyzed 2006-12-07
Standard (IC	CV-1)						
QC Batch: 3	32998		Date An	alyzed: 2006-1	2-07		Analyzed By: JR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride	<u> </u>	mg/L	12.5	11.8	94	90 - 110	2006-12-07
Fluoride		mg/L	2.50	2.46	98	90 - 110	2006-12-07
Sulfate		mg/L	12.5	11.8	94	90 - 110	2006-12-07
Standard (C	CV-1)						
QC Batch: 32998			Date An	alyzed: 2006-1		Analyzed By: JR	
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Bromide		mg/L	2.50	2.46	98	93.2 - 98.5	2006-12-07
Standard (Co			Date An	alyzed: 2006-1	2-07		Analyzed By: JR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Nitrite-N		mg/L	2.50	2.46	98	90 - 110	2006-12-07
Standard (C	CV-1)						
QC Batch:	32998		Date An	alyzed: 2006-	12-07		Analyzed By: JR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Nitrate-N	1 ."'5	mg/L	2.50	2.38	95	90 - 110	2006-12-07
Standard (C	CV-1)						
QC Batch:			Date An	nalyzed: 2006-	12-07		Analyzed By: JR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride	1 mg	mg/L	12,5	12.0	96	90 - 110	2006-12-07
CHIOLIUC		1118117	14.4	14.0		70 - 31U	2000-12-07

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standard con	standard continued										
			CCVs	CCVs	CCVs	Percent					
			True	Found	Percent	Recovery	Date				
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed				
Fluoride		mg/L	2.50	2.50	100	90 - 110	2006-12-07				
Sulfate		mg/L	12.5	12.0	96	90 - 110	2006-12-07				

Standard (ICV-1)

QC Batch: 33042

Date Analyzed: 2006-12-12

Analyzed By: JG

			ICVs True	ICVs Found	ICVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 105	2006-12-12
Carbonate Alkalinity		mg/L as CaCo3	0.00	240		0 - 105	2006-12-12
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	10.0		0 - 105	2006-12-12
Total Alkalinity		mg/L as CaCo3	250	250	100	93.7 - 99.9	2006-12-12

Standard (CCV-1)

QC Batch: 33042

Date Analyzed: 2006-12-12

Analyzed By: JG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 105	2006-12-12
Carbonate Alkalinity		mg/L as CaCo3	0.00	232		0 - 105	2006-12-12
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	12.0		0 - 105	2006-12-12
Total Alkalinity		mg/L as CaCo3	250	244	98	93.7 - 99.9	2006-12-12